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PSYCHOLOGY AND PHILOSOPHY.

I.—PSYCHOLOGY AS PHILOSOPHIC METHOD.

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In an article on "The Psychological Standpoint" in Mind 41, I endeavoured to point out that the characteristic English development in philosophy—the psychological movement since Locke—had been neither a "threshing of old straw," nor a movement of purely negative meaning, whose significance for us was exhausted when we had learned how it necessarily led to the movement in Germany—the so-called "transcendental" movement. Its positive significance was found to consist in the fact that it declared consciousness to be be the sole content, account and criterion of all reality; and psychology, as the science of this consciousness, to be the explicit and accurate determination of the nature of reality in its wholeness, as well as the determination of the value and validity of the various elements or factors of this whole. It is the ultimate science of reality, because it declares what experience in its totality is; it fixes the worth and meaning of its various elements by showing their development and place within this whole. It is, in short, *philosophic method*. But that paper was necessarily largely negative, for it was necessary to point out that as matter of fact the movement had not been successful in

presenting psychology as the method of philosophy, for it had not been true to its own basis and ideal. Instead of determining all, both in its totality and its factors, through consciousness, it had endeavoured to determine consciousness from something out of and beyond necessary relation to consciousness. It had determined its psychology from a dogmatically presupposed ontology, instead of getting at its ontology from a critical examination of the nature and contents of consciousness, as its standpoint required. It had a thing-in-itself, something whose very existence was to be opposed to consciousness, as in the unknowable "substances" of Locke, the transcendent Deity of Berkeley, the sensations or impressions of Hume and Mill, the "transfigured real" of Spencer; and it used this thing-in-itself as the cause and criterion of conscious experience. Thus it contradicted itself; for, if psychology as method of philosophy means anything, it means that nothing shall be assumed except just conscious experience itself, and that the nature of all shall be ascertained from and within this.

It is to the positive significance of psychology as philosophic method—its significance when it is allowed to develop itself free from self-contradictory assumptions—that this present paper is directed. It was suggested in the previous paper that this method, taken in its purity, would show substantial identity with the presuppositions and results of the "transcendental" movement. And as the principal attacks upon the pretensions of psychology to be method for philosophy, or anything more than one of the special sciences, have come from representatives of this movement, this paper must be occupied with treating psychology in reference to what we may call German philosophy, as the other treated it in reference to English philosophy. In so far as the criticisms from this side have been occupied with pointing out the failure of the actual English psychology to be philosophy, there is of course no difference of opinion. That arises only in so far as these criticisms have seemed (*seemed*, I repeat) to imply that the same objections must hold against every *possible* psychology; while it seems to the writer that psychology is the only *possible* method.

It is held, or seems to be held, by representatives of the post-Kantian movement, that man may be regarded in two aspects, in one of which he is an object of experience like other objects: he is a finite thing among other finite things; with these things he is in relations of action and reaction, but possesses the additional characteristic that he is a knowing, feeling, willing *phenomenon*. As such, he forms

the object of a special science, psychology, which, like every other special science, deals with its material as pure object, abstracting from that creative synthesis *of subject and object*, self-consciousness, through which all things are and are known. It is therefore, like all the special sciences, partial and utterly inadequate to determining the nature and meaning of that whole with which philosophy has to deal. Nay more, it is itself ultimately dependent upon philosophy for the determination of the meaning, validity and limits of the principles, categories and method which it unconsciously assumes. To regard psychology therefore as philosophic method is to be guilty of the same error as it would be to regard the highest generalisations of, say, physics, as adequate to determining the problems of philosophy. It is an attempt to determine the unconditioned whole, self-consciousness, by that which has no existence except as a conditioned part of this very whole.

"Metaphysics (says Prof. Caird) has to deal with conditions of the knowable, and hence with self-consciousness or that unity which is implied in all that is and is known. Psychology has to inquire how this self-consciousness is realised or developed in man, in whom the consciousness of self grows with the consciousness of a world in time and space, of which he individually is only a part, and to parts of which only he stands in immediate relation. In considering the former question we are considering the sphere within which all knowledge and all objects of knowledge are contained. In considering the latter, we are selecting one particular object or class of objects within this sphere. . . . It is possible to have a *purely objective* anthropology or psychology—which abstracts from the relation of man to the mind that knows him—just as it is possible to have a purely objective science of nature." [1]

The other aspect of man is that in which he, as self-conscious, has manifested in him the unity of all being and knowing, and is not finite, *i.e.*, an object or event, but is, in virtue of his self-conscious nature, infinite, the bond, the living union of all objects and events. With this infinite, universal self-consciousness, philosophy deals; with man as the object of experience, psychology deals.

In stating the position of the post-Kantian movement, I used the word *seemed*, and used it advisedly, as I do not conceive that at bottom there is any difference of opinion. But it seems to me that there are invariably involved in the reasonings of this school certain presuppositions regarding the real science of psychology which, probably for the reason that the writers have seen such misuse made of a false

[1] Art. "Metaphysic," *Ency. Britt.*. xvi., 89. Cp. Prof. Adamson, *Philosophy of Kant*, pp. 22 ff., *Fichte*, pp. 109 ff.; *Essays in Philosophical Criticism*, pp. 44 ff.; Prof. A. Seth, *Ency. Britt.*, art. "Philosophy".

psychology, are not distinctly stated, and which, accordingly, not only lessen the convincing force with which their reasonings are received by those unacquainted with the necessity and rationality of these presuppositions, but which also, as not distinctly thought out, tend at times to involve these reasonings in unnecessary obscurity and even contradictions. It is these presuppositions regarding the nature of a real psychology, lying at the basis of all the work of the post-Kantian school, conditioning it and giving it its worth, which it is the object of this paper to examine.

The start is made accordingly from the supposed distinction of aspects in man's nature, according to one of which he is an object of experience and the subject of psychology, and according to the other of which, he, as self-consciousness, is the universal condition and unity of all experience, and hence not an object of experience. As I have already referred to Prof. Adamson's treatment of this distinction, let me refer to a later writing of his which seems to retract all that gave validity to this distinction. In a recent number of MIND (ix. 434), after pointing out that the subject-matter of psychology *cannot* be *pure* objects but must always be the reference of an individual subject to a content which is universal, he goes on with the following most admirable statement:

> "It is in and through the conscious life of the individual that all the thinking and acting which form the material for other treatment is realised. When we isolate the content and treat it as having a *quasi*-existence *per se*, we are in the attitude of objective or natural science. When we endeavour to interpret the significance of the whole, to determine the meaning of the connective links that bind it together, we are in the attitude of philosophy. But when we regard the modes through which knowledge and acting are realised in the life of an individual subject, we are in the position of the psychological inquirer."

Now, when psychology is defined as the science of the realisation of the universe in and through the individual, all pretence of regarding psychology as merely one of the special sciences, whose subject-matter by necessity is simply some one department of the universe, considered out of relation to the individual, is, of course, abandoned. With this falls, as a matter of course, the supposed two-fold character of man's nature. If the essence of his nature is to be the realisation of the universe, there is no aspect in which, *as man*, it appears as a mere object or event in the universe. The distinction is now transferred to the two ways of looking at the same material, and no longer concerns two distinct materials. Is this distinction, however, any more valid? Is there

any reason for distinguishing between the modes through which the universe is realised in an individual, and the significance of this universe as a whole? At first sight there may appear to be, but let us consider the following questions. Does the whole have any significance beyond itself? If we consider experience in its absolute totality so far as realised in the individual, can the "significance of the whole" be determined beyond what itself testifies to as a whole; and do the "connective links which bind together" have any "meaning" except just as they do bind together? And since this whole and these connective links are given to us by the science of psychology, what is this except completed philosophic method, and what more has philosophy to do except to abstract from this totality, and regard it, on its material side, as philosophy of nature, and on its formal as real logic? Psychology, as science of the realisation through the individual of the universe, answers the question as to the significance of the whole, by giving that whole, and at the same time gives the meaning of the parts and of their connexion by showing just their place within this whole.

It would be fatal to the existence of philosophy as well as of psychology to make any distinction here. Were not the universe realised in the individual, it would be impossible for the individual to rise to a universal point of view, and hence to philosophise. That the universe has not been completely realised in man is no more an objection to the employment of psychology as the determination of the nature of this universe, than it is to any treatment of philosophy whatever. In no way can the individual philosophise about a universe which has not been realised in his conscious experience. The universe, except as realised in an individual, has no existence. In man it is partially realised, and man has a partial science; in the absolute it is completely realised, and God has a complete science. Self-consciousness means simply an individualised universe; and if this universe has *not* been realised in man, if man be not self-conscious, then no philosophy whatever is possible. If it *has* been realised, it is in and through psychological experience that this realisation has occurred. Psychology is the scientific account of this realisation, of this individualised universe, of this self-consciousness. What other account can be given? It is the object of this paper to show that no other account can be given. Not only is any final distinction or dualism, even of aspects, in man's nature utterly untenable, but no distinction even of aspects can be

made in the *treatment* of man's nature. Psychology has to do with just the consciousness which constitutes man's experience, and all further determinations of experience fall within this psychological determination of it, and are hence abstract. More definitely, Psychology, and not Logic, is the method of Philosophy. Let us deal *seriatim* with these two questions.

I.

No such distinction in the nature of man, as that in one aspect he is "part of the partial world," and hence the subject of a purely natural science, psychology, and in another the conscious subject for which all exists, the subject of philosophy, can be maintained. This is our first assertion. Let us turn again to that most lucid and comprehensive statement of philosophic doctrine by Prof. Caird, from which extract has already been made. The distinction to be upheld is that between the "sphere in which all knowledge and all objects of knowledge are contained" and "one particular object within this sphere". The question which at once arises is, How does this distinction come about? Granted that it is valid, how is man known as requiring in his nature this distinction for his proper comprehension? There is but one possible answer: it is a distinction which has arisen within and from conscious experience itself. In the course of man's realisation of the universe there is necessitated this distinction. This distinction therefore falls within the sphere of psychology, and cannot be used to fix the position of psychology. Much less can psychology be identified with some one aspect of experience which has its origin only within that experience which in its wholeness constitutes the material of psychology. The distinction, as we shall immediately see, cannot be an absolute one: by no possibility or contingency can man be regarded as *merely* one of objects of experience; but so far as the distinction has relative validity it is a purely psychological one, originating because man in his experience, at different *stages* of it, finds it necessary to regard himself in two lights,—in one of which he is a particular space- and time-conditioned being (we cannot say object or event) or activity, and in the other the unconditioned eternal synthesis of all. At most the distinction is only one of various stages in one and the same experience, both of which, as stages of experience—one, indeed, of experience in its partiality and the other of experience in its totality—fall within the science of experience, *viz.*, psychology.

We will see how the question stands if we state it otherwise. Does or does not the self-consciousness of man fall within the science of psychology? What reason can be given for excluding it? Certainly few would be found so thorough-going as to deny that perception is a matter which that science must treat; those however who admit perception would find themselves hard put to it to give a reason for excluding memory, imagination, conception, judgment, reasoning. Why having reached the stage of reasoning, where the original implicit individual with which we began has been broken up into the greatest possible number of explicit relations, shall we rule out self-consciousness where these relations are again seen united into an individual unity? There is no possible break: either we must deny the possibility of treating perception in psychology, and then our "purely objective science of psychology" can be nothing more than a physiology; or, admitting it, we must admit what follows directly from and upon it—self-consciousness. Self-consciousness is indeed a *fact* (I do not fear the word) of experience, and must therefore find its treatment in psychology.

But this is not all. Not only does self-consciousness appear as one of the stages of psychological experience, but the explanation of the simplest psychological fact—say one of perception, or feeling, or impulse—involves necessary reference to self-consciousness. Self-consciousness is involved in every simpler process, and no one of them can be scientifically described or comprehended except as this involution is brought out. In fact, their comprehension or explanation is simply bringing to light this implication of self-consciousness within them. This would be the last thing that the upholders of self-consciousness as the final unity and synthesis, the absolute meaning of experience, could deny. The organic nature of self-consciousness being their thesis, it must indeed reveal itself in, or rather constitute, each of its members and phases. The very *existence* of any idea or feeling being ultimately its relation to self-consciousness, what other account of it can be given except its organic placing in the system? If there be such an act as perception, a candid, careful examination of it, *not of its logical conditions*, but of itself as *matter of experienced fact*, will reveal what it is; and this revelation will be the declaration of its relation to that organic system which in its wholeness is self-consciousness. We may then abstract from this relation, which constitutes its very being, and consider it as an *object of perception*, and, generalising the case, produce a

philosophy of nature; or, considering it as conditioned by thought, we may thus produce a logic. But both of these proceedings go on in abstraction from its real being, and cannot give the real method of philosophy. In short, the real *esse* of things is neither their *percipi*, nor their *intelligi* alone; it is their *experiri*. Logic may give us the science of the *intelligi*, the philosophy of nature of the *percipi*, but only psychology can give us the systematic connected account of the *experiri*, which is also in its wholeness just the *experior*—self-consciousness itself.

We may see how the matter stands by inquiring what would be the effect upon philosophy if self-consciousness were not an *experienced fact*, *i.e.*, if it were not one actual stage in that realisation of the universe by an individual which is defined as constituting the sphere of psychology. The result would be again, precisely, that no such thing as philosophy, under any theory of its nature whatever, is possible. Philosophy, it cannot be too often repeated, consists simply in viewing things *sub specie æternitatis* or *in ordine ad universum*. If man, as matter of fact, does not realise the nature of the eternal and the universal *within* himself, as the essence of his own being; if he does not as one stage of his experience consciously, and in all stages implicitly, lay hold of this universal and eternal, then it is mere matter of words to say that he can give no account of things as they universally and eternally are. To deny, therefore, that self-consciousness is a matter of psychological experience is to deny the possibility of any philosophy.

What the denial comes to we have had historically demonstrated in Kant. He admits perception and conception as matters of experience, but he draws the line at self-consciousness. It is worth noticing that his reason for denying it is not psychological at all, but logical. It is not because self-consciousness *is* not a fact, but because it *cannot* be a fact according to his logical presuppositions. The results following the denial are worthy of notice as corresponding exactly to what we might be led to expect: first, with the denial of the fact of self-consciousness comes the impossibility of solving the problem of philosophy, expressed in the setting up of an unknown thing-in-itself as the ultimate ground and condition of experience; and, secondly, comes the failure to bring perception and conception into any organic connexion with experience, that is, the failure to really comprehend and explain them, manifested in the limitation of both perception, through the forms of space and time, and thinking, through the categories, to pheno-

mena which are in no demonstrable connexion with reality. The failure to recognise self-consciousness as a stage of psychological experience leads not only to a failure to reach the alternate synthesis of experience, but renders it impossible to explain the simpler forms of psychological experience. This failure of Kant teaches us another lesson also, in that, as already stated, it was due to abandoning his real method, which was *psychological*, consisting in the self-knowledge of reason as an organic system by reason itself, and setting up a *logical* standard (in this latter case the principles of non-contradiction and identity), by which to determine the totality of experience. The work of Hegel consisted essentially in showing that Kant's *logical* standard was erroneous, and that, as matter of logic, the only true criterion or standard was the organic notion, or *Begriff*, which is a systematic totality, and accordingly able to explain both itself and also the simpler processes and principles. That Hegel accomplished this work successfully and thoroughly there can be to the writer no doubt; but it seems equally clear that the work of Kant is in need of another complement, following more closely his own conception of method and of philosophy, which shall consist in showing self-consciousness as a fact of experience, as well as perception through organic forms and thinking through organic principles. And it seems further that, only when this has been done, will, for the first time, the presuppositions latent in the work of Hegel, which give it its convincing force and validity, be brought out.

Again, it seems worthy of note, that the late Prof. Green (of whom the writer would not speak without expressing his deep, almost reverential gratitude), when following out Kant's work from its logical side, hardly escaped Kant's negative results. (By Kant's logical method we mean the inquiry into the *necessary conditions* of experience; by his psychological method the inquiry into the *actual nature* of experience.) After his complete demonstration of consciousness as the final condition, synthesis and unity of all that is or is knowable, he finds himself obliged to state (*Prolegg. to Ethics*, p. 54): "As to what that consciousness in itself or in its completeness is, we can only make negative statements. *That* there is such a consciousness is implied in the existence of the world; but *what* it is we can only know through its so far acting in us as to enable us, however partially and interruptedly, to have knowledge of a world or an intelligent experience." Had he begun from the latter statement, and shown as matter of fact that this universal

consciousness *had* realised itself, though only partially and interruptedly, in us, he certainly would have been able to make very positive statements regarding it, and would also have furnished a basis in fact for his logical method, which now seems to hang upon nothing but a unity of which all that can be said is that it *is* a unity, and that it *is not* anything in particular. When one reflects that it is not only upon the existence of this unity, but upon its working in and through us, that all philosophy and philosophising depend, one cannot conceal the apprehension that too great a load of philosophy has been hung upon too feeble a peg.

So, too, after his victorious demonstration that upon the existence of this spiritual unity depends the possibility of all moral experience, he finds himself obliged to state (p. 180), with that candour so characteristic of all his thinking: "Of a life of completed development, of activity with the end attained, we can only speak or think in negatives, and thus only can we speak or think of that state of being in which, according to our theory, the ultimate moral good must consist". Once more, had he started from the fact that as matter of actual realisation this absolute good has been reproduced in our lives and the end attained (for surely the good is a matter of quality and not of quantity, and the end a power, not a sum), he would not have found himself in this difficulty. But with a purely logical method, one can end only with the *must be* or the *ought*: the *is* vanishes, because it has been abstracted from. The psychological method starts from the *is*, and thereby also gives the basis *and* the ideal for the *ought* and *must be*.

But it is time that we returned to our thesis, which, in brief, was that no distinction which maintains that psychology is the science of man as "part of this partial world" can be maintained. The following reasons for this denial have been given: it was pointed out that the relative validity which this distinction in man's nature undoubtedly possesses is itself the product and manifestation of psychological experience; that man as man, or as the conscious experience whose science is psychology, is self-conscious, and that therefore self-consciousness as the unity of subject and object, not as "purely objective," as the totality, not as a "part," must be included in the science of psychology; and that furthermore this treatment of self-consciousness is necessary for the explanation and comprehension of any partial fact of conscious experience. And finally, it was pointed out that the denial of self-consciousness as constitut-

ing matter of experience, and hence of psychology, was the denial of the possibility of philosophy itself; and this was illustrated by historic examples. Before passing on to the second topic, I wish briefly to return to Prof. Caird's exposition, and shelter myself somewhat beneath the wings of his authority. In the article already referred to, he goes on to state that the natural objective science of man after all "omits the distinctive characteristic of man's being"; that while we may treat inorganic nature and even organic with purely natural objective methods and principles, because "they are not unities for *themselves*, but only *for us*," such treatment cannot be applied to man, for man *is for himself*, *i.e.*, is not a pure object, but is self-consciousness. Thus, he continues (p. 89):

> "In man, in so far as he is self-conscious—*and it is self-consciousness that makes him man*—the unity through which all things are and are known is manifested. . . . Therefore to treat him as a simply natural being is *even more inaccurate and misleading* than to forget or deny his relation to nature altogether. A true psychology must avoid both errors: it must conceive man as at once spiritual and natural; it must find a reconciliation of freedom and necessity. It must face *all the difficulties involved in the conception of the absolute principle of self-consciousness*—through which all things are and are known—*as manifesting itself in the life of a being like man*, who 'comes to himself' only by a long process of development out of the unconsciousness of a merely animal existence."

When it is stated, later on, that the natural science of man "is necessarily abstract and imperfect, as it omits from its view the central fact in the life of the object of which it treats" (p. 92), it is hardly worth while discussing whether there be any such science or not. But there is suggested for us in the quotation just made our second problem—the final relation of psychology, which confessedly must deal with self-consciousness, to philosophy. For there the problem of psychology was stated to be the question of the "absolute principle of self-consciousness, manifesting itself in the life of a being like man". That is, it is here suggested that psychology does not deal with the absolute principle in itself, but only with the modes by which this is manifested or realised in the life of man. Psychology no longer appears as an objective science; it now comes before us as a phenomenology, presupposing a science of the absolute reality itself. It is to this question that I now turn. Is psychology the science *merely* of the manifestation of the Absolute, or is it the science of the Absolute itself?

II.

The relation of Psychology to Philosophy now stands, I suppose, something like this:—There is an absolute self-consciousness. The science of this is philosophy. This absolute self-consciousness manifests itself in the knowing and acting of individual men. The science of this manifestation, a phenomenology, is psychology. The distinction is no longer concerned with man's being itself; it is a distinction of treatment, of ways of looking at the same material. Before going to its positive consideration the following questions may suggest the result we desire to reach. How does there come about this distinction between the "spiritual" and the "natural," between "freedom" and "necessity"? How does there come into our knowledge the notion of a distinction between the "absolute principle of self-consciousness" and "man coming to himself only by a long process of development out of the unconsciousness of a merely animal existence"? Is this a distinction which falls outside the subject-matter of psychology, and which may therefore be used to determine it; or is it one which has originated *within* psychological experience, and whose nature therefore, instead of being capable of fixing the character of psychology, must itself be determined *by* psychology? Furthermore, what *is* this distinction between the absolute self-consciousness and its manifestation in a being like man? Is the absolute self-consciousness complete in itself, or does it involve this realisation and manifestation in a being like man? If it is complete in itself, how can any philosophy which is limited to "this absolute principle of self-consciousness" face and solve the difficulties involved in its going beyond itself to manifest itself in self-consciousness? This cannot be what is meant. The absolute self-consciousness must involve within itself, as organic member of its very being and activity, this manifestation and revelation. Its being must be this realisation and manifestation. Granted that this realisation and manifestation is an act not occurring in time, but eternally completed in the nature of the Absolute, and that it occurs only "partially" and "interruptedly" *through* (not *in*) time, in a being like man,—the fact none the less remains that philosophy, under any theory of its nature, can deal with this absolute self-consciousness only so far as it has partially and interruptedly realised itself in man. For man, as object of his philosophy, this Absolute has existence only so far as it has manifested itself in his conscious experience. To return to our questions: If the material of philosophy be the

absolute self-consciousness, and this absolute self-consciousness *is* the realisation and manifestation of itself, and as material for philosophy exists only in so far as it has realised and manifested itself in man's conscious experience, and if psychology be the science of this realisation in man, what else can philosophy in its fulness be but psychology, and psychology but philosophy?

These questions are stated only to suggest the end which we shall endeavour to reach. I shall not attempt to answer them directly, but to consider first the relations of Psychology to Science, and hence to Philosophy; and secondly to Logic.

(1) *The Relation of Psychology to Science.*—Psychology is the completed method of philosophy, because in it science and philosophy, fact and reason, are one. Philosophy seems to stand in a double relation to Science. In its first aspect it is *a* science—the highest of all sciences. We take one sphere of reality and ask certain questions regarding it, and the answers give us some one science; we find in the process that this sphere of reality can only artificially be thus isolated, and we broaden and deepen our question, until finally, led by the organic connexion of science with science, we ask after the nature of all reality, as one connected system. The answer to this question constitutes philosophy as one science amid the circle of sciences. But to continue to regard it in this way is to fail to grasp the meaning of the process which has forced us into philosophy. At the same time that philosophy is seen as the completion of the sciences, it is seen as their basis. It is no longer *a* science; it is Science. That is to say, the same movement of thought and reality which forces upon us the conception of a science which shall deal with the totality of reality forces us to recognise that no one of our previous sciences was in strict truth science. Each abstracted from certain larger aspects of reality, and was hence hypothetical. Its truth was conditioned upon the truth of its relations to that whole which that science, as special science, could not investigate without giving up its own independent existence. Only in this whole is categorical truth to be found, and only as categorical truth is found in this whole is the basis found for the special sciences. Philosophy as the science of this whole appears no longer therefore as *a* science, but as all science taken in its organic systematic wholeness,—not merely to which every so-called special science is something subordinate, but of which it constitutes an organic member. Philosophy has no existence except as the organic living unity and bond

of these sciences; they have no existence except through their position in this living synthesis.

Now the question is, where does psychology stand within this organism? On the one hand, psychology is certainly a positive science. It finds its materials in certain facts and events. As to systematic observation, experiment, conclusion and verification, it can differ in no essential way from any one of them. It is based upon and deals with fact, and aims at the ordered comprehension and explanation of fact as any special science does. Yet the whole drift of this paper has been to show that in some way psychology does differ very essentially from any one of them. Where shall we find this difference? In one word, its relation to them is precisely that which we have discovered philosophy to bear: it is not only *a* science, but it turns out to be science as an organic system, in which every special science has its life, and from which it must abstract when it sets up for an independent existence of its own. We begin with any special science. That turns out to be not only some one department or sphere of reality, but also some one department of conscious experience. From one science to another we go, asking for some explanation of conscious experience, until we come to psychology, which gives us an account of it, in its own behalf, as neither mathematics, nor physics, nor biology does. So far we have only *a* special science, though the highest and most concrete of all. But the very process that has made necessary this new science reveals also that each of the former sciences existed only in abstraction from it. Each dealt with some one phase of conscious experience, and for that very reason could not deal with the totality which gave it its being, consciousness. But in psychology we have the manifestation and explication of this consciousness. It gives in its wholeness what each of them would give in part, *viz.*, the nature of experience, and hence is related to them as the whole is to the part. It appears no longer, therefore, as the highest *of* sciences: it appears as Science itself, that is, as systematic account and comprehension of the nature of conscious experience. Mathematics, physics, biology exist, because conscious experience reveals itself to be of such a nature, that one may make virtual abstraction from the whole, and consider a part by itself, without damage, so long as the treatment is purely scientific, that is, so long as the implicit connexion with the whole is left undisturbed, and the attempt is not made to present this partial science as metaphysic, or as an explanation of the whole, as is the usual fashion of our

uncritical so-called "scientific philosophies". Nay more, this abstraction of some one sphere is itself a living function of the psychologic experience. It is not merely something which it allows: it is something which it *does*. It is the analytic aspect of its own activity, whereby it deepens and renders explicit, realises its own nature; just as their connexion with each other is the synthetic aspect of the same self-realising movement, whereby it returns to itself: while psychology in its completeness is the whole self-developing activity itself, which shows itself as the organic unity of both synthetic and analytic movements, and thus the condition of their possibility and ground of their validity. The analytic movement constitutes the special sciences; the synthetic constitutes the philosophy of nature; the self-developing activity itself, as psychology, constitutes philosophy.

What other position can be given psychology, so soon as we recognise the absurdity and impossibility of considering it a purely objective science? It is the science of the modes by which, in and through the individual, the universe is realised, it is said. But that the universe has no existence except as absolutely realised in an individual, *i.e.*, except as self-consciousness, is precisely the result of philosophy, and can therefore be no objection to such a consideration of the universe: in fact, such a statement only amounts to saying that psychology considers the universe as it really is. If the assertion is varied again, to read that philosophy treats of this individualised universe as it eternally *is*, while psychology can treat of it only as it partially and interruptedly *becomes*, this loses sight of two very important facts. First, philosophy can treat of absolute self-consciousness only in so far as it *has become* in a being like man, for otherwise it is not material for philosophy at all; and, secondly, it falls into the error of regarding this realisation in man as a time-conditioned product, which it is not. Time is not something outside of the process of conscious experience; it is a form within it, one of the functions by which it organically constitutes its own being. In fact, psychology as philosophic method has an immense advantage at just this point over any other method of treating this problem. To any philosophy attempting to consider the absolute self-consciousness by itself, it must remain for ever an insoluble problem why the *is* should ever appear as *becoming*, why the eternal should ever appear through the temporal. Psychology solves the problem by avoiding the assumption which makes it a problem. For, dealing with an individualised universe, one of whose functions of realisation *is* time, it knows nothing

about any consciousness which is out of relation to time. The case is just here: if philosophy will deal with the absolute consciousness conceived as purely eternal, out of relation to time, then the existence of that which constitutes the actual content of man's experience is utterly inexplicable; it is not only a mystery, but a mystery which contradicts the very nature of that which is, *ex hypothesi*, the absolute. If philosophy does deal with the eternal absolute consciousness as for ever realised, yet as for ever having time as one of its organic functions, it is not open to any one to bring charges against psychology as philosophy, for this and no more psychology does.

The question just comes to this: If we start from reason alone we shall never reach fact. If we start with fact, we shall find it revealing itself as reason. The objection to an account of fact or experience as philosophy is but a prejudice, though historically considered a well-grounded one. On the one hand, it has arisen because some partial account of experience, or rather account of partial experience, has been put forth as the totality, and just because thus put forth as absolute has lost even the relative validity which it possessed as partial. Such is the procedure of Empiricism. On the other hand, we have had put forth as matter of fact certain truths declared to be immediate and necessary and intuitive, coming no one knows whence and meaning no one knows what. The aversion to immediacy, to "undeduced" fact, as given us by the Intuitionalists, is certainly a well-grounded one. But neither of these objections lies against psychology as account of the facts of experience. Men are mortal, and every actual account of experience will suffer from the defects of mortals, and be but partial, no doubt; unfortunately we are none of us omniscient yet. But the very essence of psychology as method is that it treats of experience in its absolute totality, not setting up some one aspect of it to account for the whole, as, for example, our physical evolutionists do, nor yet attempting to determine its nature from something outside of and beyond itself, as, for example, our so-called empirical psychologists have done. The vice of the procedure of both is at bottom precisely the same—the abstracting of some one element from the organism which gives it meaning, and setting it up as absolute. It is no wonder that the organism always has its revenge by pronouncing this abstracted element "unknowable". The only wonder is that men should still bow in spirit before this creation of their own abstracting thought, and reverence it as the cause and ground of all

reality and knowledge. There is indeed an anthropomorphism which is degrading, but it is the anthropomorphism which sets up the feeblest element of its own thinking, pure being, as Mr. Spencer does, or the poorest element of its own feeling, a sensation, and reverences that as its own and the universe's cause. That is the anthropomorphism of the enslaved thought which has not yet awakened to the consciousness of its own totality and spiritual freedom.

Nor does the account of fact given by psychology have anything in common with the "ultimate, inexplicable, necessary" mental facts called intuitions. The fact of psychology reveals itself as precisely reason, which thereby accounts for itself, and in accounting for itself accounts for all its members. The fact of psychology is not isolated "truths," but the organic system of self-consciousness. This fact is indeed "immediate," but it is immediate only in and through a process, hence of mediation. It is indeed self-evidencing, but what it evidences is simply, of the parts, relation to and dependence upon the whole, and of the whole, that it is self-conditioned and self-related. Of the whole fact it may be said indeed that it is inexplicable. "It is true that we cannot explain the spiritual principle which is implied in all experience by reference to anything else than itself."[1] "Because all we can experience is included in this one world, and all our inferences and explanations relate only to its details, neither it as a whole, nor the one consciousness which constitutes it, can be accounted for in the ordinary sense of the word. They cannot be accounted for by what they include; and being all-inclusive, there remains nothing else by which they can be accounted for."[2] In short, any system of philosophy must ultimately fall back on the fact for which no reason can be given except precisely just that it is what it is. This implication of fact[3] is latent in all philosophy whatever, and all that psychology as philosophic method does is to render this necessary implication explicit. It alone starts from the completed fact, and it alone is therefore completed philosophy.

If it may have seemed at times in the course of the discussion that the nominal subject—the relation of psychology to science—had been left, it will now appear, I think, that we have all the time been dealing with just that subject.

[1] Prof. E. Caird, MIND viii. 560.

[2] Green, *Prolegomena to Ethics*, p. 52.

[3] The insistence upon this seems to have been Lotze's great work as a philosopher.

Science is the systematic account, or *reason* of *fact*; Psychology is the completed systematic account of the ultimate fact, which, as fact, reveals itself as reason, and hence accounts for itself, and gives the "reasons" of all sciences. The other point, the relation of psychology to logic, has already been dealt with by implication, and need not detain us long again.

(2) *The Relation of Psychology to Logic.*—The whole course of philosophic thought, so far as the writer can comprehend it, has consisted in showing that any distinction between the form and the matter of philosophic truth, between the content and the method, is fatal to the reaching of truth. Self-consciousness is the final truth, and in self-consciousness the form as organic system and the content as organised system are exactly equal to each other. It is a process which, as form, has produced itself as matter. Psychology as the account of this self-consciousness must necessarily fulfil all the conditions of true method. Logic, since it necessarily abstracts from the ultimate fact, cannot reach in matter what it points to in form. While its content, if it be true philosophy, must be the whole content of self-consciousness or spirit, its form is only one process within this content, that of thought-conditions, the *Idee*. While the content is the eternal nature of the universe, its form is adequate only to "thinking what God thought and was before the creation of the world," that is, the universe in its unreality, in its abstraction. It is this contradiction between content and form in logic which makes it not philosophic method, but only one moment within that method. No contradiction results as soon as logic is given its proper place *within* the system. The contradiction occurs when, at the same moment that it is said that logic is "abstract," the logical method is still said to be the method of philosophy.

Such contradictions certainly appear to exist, for example, in the philosophy of Hegel. They have been often pointed out, and I shall only summarise them, following for the most part a recent writer.[1] There is no way of getting from logic to the philosophy of nature *logically*. The only way is to fall back upon the fact; "we know from experience" that we have nature as well as the *Idee*. In truth we do not go from logic to nature at all. The movement is a reverse movement. "In reality, the necessity for any such transition is purely factitious, because *the notions never existed otherwise than in nature and spirit*. . . . They were got

[1] Prof. A. Seth, "Hegel: an Exposition and Criticism," MIND 24.

by abstraction from the concrete. . . . We owe, therefore, no apology for a return to the reality from which we took them." In short, it is necessity of fact, a necessity of conscious experience, which takes us from the realm of the *Idee* to the realm of nature, from the sphere of thought-conditions to the sphere of existent relations. "The same is true when we pass to the philosophy of spirit. The general *form* of personality is deducible, but not a living human spirit with its individual thoughts, feelings and actions." This remains "the incomprehensible and inexplicable point in philosophy". And so it does undoubtedly while we regard logic as method of philosophy. But this "inexplicability" is but the express condemnation of the method, not a fact to be contented with. If we go deeper and inquire not how is the transition from logic to the philosophy of nature or to the philosophy of spirit made, but how is any transition whatever possible, we find the same difficulty. It exists only by reason of the presupposed fact. "We cannot in strictness say that the result has been independently proved, because it has been reached in this fashion by the method. It was presupposed *in* the method all along." In a definite case, how is the transition, say from the category of quality to that of quantity, made? It occurs not by virtue of the category of quality in itself, but by virtue of the fact that the whole *Idee* is implicitly contained in the principle of quality, and must manifest itself, which it does by forcing quality, as an inadequate expression of its own nature, into quantity, which expresses its being more fully. And thus the process continues until the *Idee* has manifested itself as the whole organic system, which has expressed explicitly all that which in *Idee* it is. But this movement itself depends on spirit, and on the manifestation of spirit in nature, as already seen. Every purely logical transition therefore occurs at bottom because of fact, *i.e.*, seen in its wholeness it is not a logical transition but a factual. Psychology, as philosophic method, merely starts from this everywhere presupposed fact, and by so doing, for the first time, gives logic its basis and validity.

There can be no escape from this result by saying that after all in the philosophy of spirit, spirit is shown to be the *prius* and condition of the whole, as it undoubtedly is by Hegel himself. This merely brings the contradiction itself into clearer light. For logic, being thus confessedly determined as abstract, is still retained to determine the nature of the concrete. Logic, while it is thus declared to be only one moment of spirit, is still used to determine the

nature of the whole. Thus is revealed the contradiction between form and content involved in the use of logic as the method of philosophy. Spirit is reached by a *logical* process, and the *logical* result is that as fact it is not reached at all. As concrete, it is beyond the reach of any abstract process. Either one must call in the aid of the presupposed but suppressed Fact, and recognise that after all the process has been going on within a further and higher determination; or, failing to see this, must recognise Spirit as only one factor or moment of the logical movement, that is, give up the notion of self-consciousness as subject, and fall back into Spinozistic pantheism. The logical movement, considered by itself, is always balancing in unstable equilibrium between dualism and pantheism. Set up as absolute method, it either recognises the fact, but being unable to comprehend it, has to regard this fact, as foreign element over against it, as the matter of Plato and Aristotle, the thing-in-itself of Kant, and *Anstoss* of Fichte,[1] or endeavours to absorb the Fact as a mere element in its own logical being, and falls into Pantheism.

This is the reason why Hegel, although the very centre of his system is self-conditioned spirit, lends himself so easily to pantheistic treatment. Logic cannot reach, however much it may point to, an actual individual. The gathering up of the universe into the one self-conscious individuality it may assert as *necessary*, it cannot give it as *reality*. It is only as logic contradicts itself and faces back on the constant presupposition of this reality that it can demonstrate what it asserts. Taken purely by itself it must issue in a pantheism where the only real is the *Idee*, and where all its factors and moments, including spirit and nature, are real only at different stages or phases of the *Idee*, but vanish as imperfect ways of looking at things, or as illusions, when we reach the *Idee*. And thus the *Idee* itself vanishes, as an organic system, as a unity which lives through its distinctions, and becomes a dead identity, in no way distinguishable from the substance of Spinoza. Logic set up as absolute method reveals its self-contradiction by destroying itself. In a purely logical method the distinctions, the process must disappear in the final unity, the product. Only a living actual Fact can preserve within its unity that organic system of differences in virtue of which it lives and moves and has

[1] The inability to go from the 'because' of reason to the 'cause' of fact, from logic to reality, when logic is not taken simply as one movement *within* reality, is clearly set forth in the closing chapters of Mr. Bradley's *Principles of Logic*.

its being. It is with this fact, conscious experience in its entirety, that psychology as method begins. It thus brings to clear light of day the presupposition implicit in every philosophy, and thereby affords logic, as well as the philosophy of nature, its basis, ideal and surety. If we have determined the nature of reality, by a process whose content equals its form, we can show the meaning, worth and limits of any one moment of this reality.

The conclusion of the whole matter is that a "being like man," since self-conscious, is an individualised universe, and hence that his nature is the proper material of philosophy, and in its wholeness the only material. Psychology is the science of this nature, and no dualism in it, or in ways of regarding it, is tenable. Whatever the dualism may be, it is only relative, and one which occurs within, not without, psychological experience. Psychology, as the complete systematic account of man, at the same time shows the value and meaning, and affords the condition, of the special sciences, the philosophy of nature and of logic. Or, in a word, if the reality of spirit be the presupposition, the *prius* and the goal, the condition and the end of all reality, the science of spirit must occupy a corresponding position with relation to all science. Surely then, as the Editor of this Journal formerly urged, "the method of psychological approach is not philosophically valueless," and we have "ground for the belief that it has only to be more systematically followed out for the attaining of as great results as have been claimed for another way, while in this way the results are more likely to secure general acceptance,"[1]—because, we may add, it simply expresses in a scientific way that which lies at the basis of all that has been otherwise secured.

[1] "Psychology and Philosophy," MIND, Vol. viii. 20.

II.—ON THE STUDY OF ANIMAL INTELLIGENCE.

By Prof. C. Lloyd Morgan.

1. The object of this paper is neither, on the one hand, to add anything to the existing enormous and somewhat chaotic mass of anecdotal fact and fiction, nor, on the other hand, to place on record the details of scientific study, but rather to consider this question: *By what method are we likely to obtain the most valuable scientific results in this department of knowledge?*

2. The subject is sufficiently familiar to enable me to dispense with preliminary illustration. I would refer each individual to his own private repertory, and to the valuable collection published by Mr. G. J. Romanes in his *Animal Intelligence.*

Now with regard to all such anecdotes we may note that, in each case, there are two elements:—

(*a*) Certain actions performed under certain external circumstances. These I will call the *facts.*

(*b*) Certain *inferences* which are drawn from the facts.

The first thing to be done in the scientific study of this question is, therefore, *to disentangle the facts from the inferences.*

Let me give one example, quoted by Mr. Romanes:—

"One of the orangs which recently died at the Ménagerie of the Musée was accustomed, when the dinner hour had come, to open the door of the room where he took his meals, in company with several persons. As he was not sufficiently tall to reach as far as the key of the door, he hung on to a rope, balanced himself, and after a few oscillations very quickly reached the key. His keeper, who was rather worried by so much exactitude, one day took occasion to make three knots in the rope, which, having thus been made too short, no longer permitted the orang-outan to seize the key. The animal, after an ineffectual attempt, *recognising the nature of the obstacle to his desires,* climbed up the rope, placed himself above the knots, and untied all three, in the presence of M. Geoffroy Saint-Hilaire, who related the fact to me." (Leuret, *Anat. Comp. du Syst. Nerv.*, i. 540.)

Here we have the *fact* of the orang untying the knots, and the *inference* that he recognised the nature of the obstacle. Another witness might have inferred that he did it from destructiveness, the desire to pick to pieces what his keeper had done, another that he did it from inquisitiveness, and so on.

First, then, let us disentangle the facts from the infer-

ences. The facts, if recorded exactly as they were observed (eliminating the personal equation so far as is possible), may be put on one side for attentive study as the pure material of science.

3. As to the inferences, let us inquire, What is their nature and their value?

The inferences are of two kinds :—

(*a*) Inferences concerning the nature, cause, and mode of origin of the habits, customs, activities, &c. These are *Objective Inferences.*

(*b*) Inferences concerning the underlying mental states, feelings, motives, &c. These are Subjective, or better (following Clifford), *Ejective Inferences.*

With regard to the objective inferences, they are of undoubted scientific value. Let us by all means draw them with all possible caution and verify them with all possible care.

It is with the ejective inferences that I wish specially to deal. They are clearly psychological in character, and form the basis of the modern science of Comparative Psychology.

4. In all psychological investigation, "the fundamental isolation of the individual mind" is a fact to be steadily borne in remembrance. The only mind with which any one of us is directly acquainted is his own mind. Our conceptions of the world and of man must be framed in terms of our own individual modes of consciousness. For each of us this is our one standard. Each of us lives in his own world which he makes for himself. The world of the melancholy Jaques differs *toto cælo* from the world of the genial Mark Tapley. A great true mind cannot conceive the littlenesses and falsities of small mindlets; nor can a little mind appreciate a great man, but picks out, according to idiosyncrasy, some pretty little trait of character, or some little fault or fad, and for ever harps on that.

I need not dwell upon this point, I take it as generally admitted that for each man his own mind is the one criterion he has in matters mental. My neighbour's mind is not, and never can be, an object to me; it is an *eject*, an image of my own consciousness which I throw out of myself. I hold this term *eject* to be of great scientific value. To say that other minds than my own are ejects is a great advance in clearness and definiteness on the statement that my knowledge of other minds than my own is inferential. It marks clearly the fact that my conception of other minds must be framed in terms of my own mind.

5. But what is our justification for this ejective procedure?

(*a*) *The justification by results.* We habitually act towards our neighbours as if they were conscious beings like ourselves, with results which point to the correctness of our hypothesis.

(*b*) *The justification based on descent.* I have inherited from my ancestors certain brain-structures; I have also inherited certain mental faculties. I have good reasons for believing that in my brain and nervous system nervous changes (neuroses) run parallel, or are identical with, changes of consciousness (psychoses). I am therefore impelled to believe that my neighbours who have like me inherited a brain, have also like me inherited a mind; and that in them also there is a parallelism or identity of neuroses and psychoses.

6. The next question that arises is this: How can we frame out of such materials a science of Human Psychology? Since the only mind of which any man knows anything directly is his own, how can we arrive at any principles of general application? Only through Language; and in the following way. A psychologist records, by means of language, the results at which he arrives by the only method open to him as a psychologist, that is by introspection. His successors receive his results; and each submits them to the touchstone of his individual consciousness. He submits them to individual subjective verification. Thus the principles pass through many minds, and by each in turn are subjectively verified. Individual peculiarities are gradually eliminated; and that which was at first but of limited application to the individual subject, becomes of general application to what may be termed the *social eject*. Language makes possible the social eject; and thus makes possible a science of Human (as opposed to Individual) Psychology.

7. It may be well in passing to draw attention to the necessary limitations of Psychology as a science. The social eject, of which its generalisations are predicated, is in reality a class eject and not an universally human eject. The conclusions of psychology hold good and have a scientific value just so far as, and for that class by which, they have been subjectively verified. But this class is a small one, composed of men whose minds are of a special calibre and who have had special training. Hence we must confess that our psychology holds good for civilised, but not of necessity for uncivilised, folk. It is a psychology of sages, but not of savages.

8. It may, I think, be fairly said that we have a fuller

knowledge of the social eject than of any individual eject. We may know a good deal of human psychology and yet find it exceedingly difficult to learn anything of our neighbours' minds and true characters. We gain the information on which we base our ejective inferences in two ways:—

(*a*) Through Verbal Utterances.
(*b*) Through Conduct.

Even setting aside intentional deception, we are constantly liable to serious errors of interpretation. When I was at school a school-fellow was severely caned. He came to his seat pale and with clenched teeth. "Did it hurt much?" I whispered. "Hurt! who cares for pain?" he replied. "He caned me for a lie I never told." My interpretation had been entirely erroneous. So too in the case of public characters. The saying and doings of Mr. Gladstone are before the world. But how wide is the difference of interpretation by different sections of the community. We say that this is due to prejudice. But what is prejudice but the colour of the subject which inevitably tints every eject that it frames?

9. We may therefore say—

(*a*) That all our knowledge of human minds other than our own is necessarily ejective.

(*b*) That our systems of human psychology hold good only for the philosophers who frame them.

(*c*) That they hold good in a diminishing degree for minds of successively lower development.

(*d*) That our ejective inferences concerning our neighbours' motives, minds, and characters are liable to error.

(*e*) That our ejective inferences concerning the motives, minds, and characters of human beings (such as savages) whose lives are passed under social conditions widely different from our own must of necessity be still more liable to error.

10. We now pass on to the further position—

(*a*) That all our knowledge of animal minds is of necessity ejective.

(*b*) That our ejective inferences concerning their motives, minds, and characters are so largely liable to error as to render the drawing of them unprofitable for purposes of scientific investigation, except in so far as they may aid the objective study of habit and activity.

But first as to the question of their possessing minds at all. Prof. Max Müller tells us (*Chips &c.*, iv. 559) that "according to the strict rules of positive philosophy we

have no right to assert or deny anything with reference to the so-called mind of animals". This is, however, contrary to an almost universal belief. What are the justifications of our ejective procedure?

(*a*) *The justification by results.* We habitually act towards our four-footed friends as if they were conscious beings, with results which point to the correctness of our hypothesis.

(*b*) *The justification based on evolution.* Animals have inherited brain-structures in many respects similar to those possessed by man; and there is no reason for supposing that in them no psychoses run parallel, or are identical, with their neuroses.

11. We are thus justified in believing in the existence of intelligence or mind in animals. But we must steadily bear in mind the fact that it has to be interpreted not only by, but *in terms of*, human consciousness. It is impossible for us to divest ourselves of the complexity of human consciousness.

I cannot here enter at length into the subject of this complexity. All agree that the difference between the civilised human mind and the mind of even the dog or the elephant is probably enormous. And yet it is in terms of this immensely complex mind that our ejective images of brute minds must be framed. The complexity is, no doubt, largely brought about by language. For while the brute has to be contented with the experience he inherits or individually acquires, aided no doubt in some cases by a little judicious maternal teaching; man, through language spoken and written, profits by the experience of his fellows and the recorded results of centuries of ever-widening experience and ever-deepening thought.

It is through language that we live, as I have elsewhere tried to enforce (*Springs of Conduct*, chap. i.), to so large an extent in a world, not of sensations, nor of perceptions, but of complex general conceptions. All that enters the mind of man becomes at once clothed with human conceptions. As Emerson says, "Nature always wears the colours of the spirit". We may call this the "pathetic fallacy"; but we cannot get rid of it. Every conception a man forms is impressed (1) with his humanity; (2) with his personality; and neither of these can he by any means get rid of.

If, therefore, we speak of memory, sympathy, affection, revenge, &c., as mental qualities possessed by animals, we must remember that each of these is stamped with the human image and superscription, and bears our own individual mark.

12. There is also a special point in which our interpretations of the feelings which underlie the activities of animals, are far more liable to error than our interpretations in the case of other men—savages, for example. It is that what may be termed the *ratio of the senses* is so different. All our knowledge of sensible things is acquired through, and built up out of, sensible impressions, however much they may be impressed with our humanity and our personality. A material difference in the ratio of the senses must, we may suppose, make a material difference in the nature of the mental product. Compare, *e.g.*, man with his delicate sense of touch, the deer with its marvellously acute sense of smell, the eagle with its intense vision, the ant with unknown antennary senses. I speak of known objective differences, as observed in, or inferred from, the study of habit; and I submit that, if we can infer anything of the underlying mental states, these known objective differences must be accompanied by unknown psychical differences.

13. The element of pain also presents a point of special difficulty. We have abundant evidence how strong a tendency there is at the present time to credit animals with a sensibility equal to, or greater than, our own in this respect. This seems at first sight justified by the cries of a wounded animal, and the howls of a dog under the horse-whip. But there are many facts which point in an opposite direction. We read, for example, that—

"A post-horse came down on the road with such violence, that the skin and sinews of both the fore fetlock joints were so cut that on its getting up again the bones came through the skin, and the two feet turned up at the back of the legs,—the horse walking upon the ends of its leg bones. The horse was put into a field close by, and the next morning it was found quietly feeding about the field, with the feet and skin forced some distance up the leg-bones; and, where it had been walking about, the holes made in the ground by the leg-bones were three or four inches deep" (G. A. Rowell, *Essay on the Beneficent Distribution of the Sense of Pain*, quoted by E. D. Girdlestone, *Vivisection*, p. 18).

I submit that in this matter we are not in a position to draw inferences sufficiently exact to be of value for scientific purposes.

14. We thus see how profoundly liable to error are our ejective inferences in Animal Psychology. Let us now try and assign to them their true place and value in the study of Animal Intelligence. We clearly cannot afford to neglect them altogether. And yet it is difficult to see how we can hope to frame a science of Comparative Psychology out of such materials. Could we frame a science of Astronomy if the only method of procedure were to observe the stars and

planets in mirrors of varying and unknown curvature? Harder still is the task of framing a science of Comparative Psychology out of our ejective knowledge of the mental faculties of animals, liable as they are to inevitable errors of unknown amount.

What then is our best course in face of this difficulty? I venture to suggest that we should only make use of ejective inferences in so far as they may aid us in the scientific study of the habits and activities of animals. We cannot get on without occasional reference to motives and underlying mental states. But let us use them as sparingly as possible, remembering the inherently untrustworthy nature of our inferences.

I am aware that, if we adopt this course, a vast amount of carefully collected anecdote will have to be excluded as scientific evidence. But will science be the loser? I venture to think not. Take for example the great number of stories illustrative of revenge, jealousy, sense of humour, sense of justice, consciousness of guilt, deceitfulness, cruelty, and so forth in the higher mammalia. There is hardly one of these stories that does not admit of a different interpretation than that given by the narrator. A cat's treatment of a mouse is adduced by a number of witnesses as illustrative of cruelty. But others see in this conduct, not cruelty, but practice and training in an important part of the business of cat-life. Mr. Romanes quotes as typically illustrative of "an idea of caste," the case of Mr. St. John's retriever, which struck up an acquaintance with a rat-catcher and his cur, but at once cut his humble friends, and denied all acquaintance with them, on sight of his master. I, on the other hand, should regard this case as parallel to that which I have noted a hundred times. My dogs would go out with the nurse and children when I was busy or absent; but if I appeared within sight they raced to me. The stronger affection prevailed. A dog is described as "showing a deliberate design of deceiving" because he hobbled about the room as if lame and suffering pain from his foot. I would suggest that there was no *pretence* in this case, but a direct association of ideas between a hobbling gait and more pity and attention than usual. A friend of my own, whose dog was fond of the forbidden pleasures of the drawing-room arm-chair, used to say, when he found the dog standing sheepishly on the rug while the arm-chair was preternaturally warm, that Turk had a strong sense of guilt and always knew when he had done wrong. I fancied that, if we could see into the dog's mind, we should find there, not a

recollection of guilt (and how complex a conception is that of guilt), but an anticipation of what his master euphemistically called 'catching it'.

Let me add one more instance. When the lioness at the Bristol Zoological Gardens lately had cubs, one tottered kitten-fashion to the bars of the cage, and I ventured to stroke its nose. The mother rose and carried the little thing back to the further end of the cage. "I wish," I said the other day to Mr. Nettleship, the animal painter, "you could have caught the look of conscious dignity (I speak anthropomorphically) with which she seemed to say, 'How dare you meddle with my child?'" "I have seen such a look and attitude," the painter replied, "but I attributed it not to pride but to fear."

I say then that, even taking the facts as narrated by the observer, there is, in a great number of cases, more than one probable interpretation. And I now proceed to notice how strong a tendency there is in these cases to see and describe the facts in accordance with the individual interpretation. I do not hint at intentional dishonesty. I speak of scarcely avoidable unconscious bias; the tendency to see what one expects to see, and to fill in missing links which one is certain were there—only we stupidly failed to observe them.

I should therefore advocate the most sparing use of the psychical element consistent with an adequate study of habits and activities. Take one example. I pinch a dog's tail and he bites me. Another dog is chained up and asleep. I hammer his tail with a stick. He flies at me, but cannot reach me for the chain. A week afterwards he bites me in the street. An unmistakable case, some will say, of the dog's harbouring feelings of revenge. What I advocate is that such a case should be recorded simply as one of postponement of action, of deferred response. Instead of the results of the injury occurring at once, they occur after a certain lapse of time. This implies memory, a mental phenomenon; but it implies no complex mental state with distinctly human associations. In a word I would advocate the study of actions and habits, but place the motives (so difficult to get at even in the case of our neighbours) on one side, as at present beyond the reach of scientific treatment.

I am aware that it will be objected that progressive complexity of motive is one of the most important evidences of mental evolution in animals. I know it; and I hold it incumbent on men of science honestly to confess that direct evidence of mental evolution in animals is, in the present state of science, impossible or unattainable. If we can place

on a firm scientific footing the doctrine of the parallelism (or identity) of neuroses and psychoses, and if we can further prove the truth of biological evolution, then the doctrine of mental evolution will be tenable as an inevitable corollary. But to attempt to prove this doctrine by reference to a number of hypothetical motives and complex mental states is in my opinion likely to hinder rather than to advance the acceptance of the doctrine by all careful thinkers.

Let us, therefore, I repeat, stick to the objective study of habits and activities, reflex, instinctive and intelligent, making use of ejective inferences as sparingly as possible.

15. This leads us to reconsider the current definitions of Reflex Action, Instinct and Intelligence, which involve as an essential the element of consciousness.

I quote those given by Mr. Romanes in his *Animal Intelligence* and adhered to in his later *Mental Evolution in Animals*.

"Reflex action is non-mental neuro-muscular adjustment, due to the inherited mechanism of the nervous system, which is formed to respond to particular and often recurring stimuli, by giving rise to particular movements of an adaptive though not of an intentional kind.

"Instinct is reflex action, into which there is imported an element of consciousness. The term is therefore a generic one, comprising all those faculties of mind which are concerned in conscious and adaptive action, antecedent to individual experience, without necessary knowledge of the relation between means employed and end attained, but similarly performed under similar and frequently recurring circumstances by all the individuals of the same species.

"Reason or intelligence is the faculty which is concerned in the intentional adaptation of means to ends. It therefore implies the conscious knowledge of the relation between means employed and ends attained, and may be exercised in adaptation to circumstances novel alike to the experience of the individual and to that of the species" (p. 17).

16. I begin by offering two general suggestions:—

(*a*) Would it not be well to avoid the introduction of the term reflex action into the definition of instinct? It leads to a somewhat forced interpretation of that term. A reflex action is a direct response to a definite stimulus. Can we describe all instincts—the migratory instincts of birds for example—as reflex actions?

(*b*) Would it not also be well to avoid the introduction of the term reason as an alternative to intelligence. We seem scarcely to require such an alternative. And the term reason is at once suggestive of a controversy which is not suggested by the term intelligence. I am aware that, if I choose to define reason as the intentional analysis and synthesis of conceptions, that is nothing to Mr. Romanes, who prefers to use the term as synonymous with intelligence. But I am not advocating my own definition (which I only

introduce by way of example) but merely suggesting that the use of the synonym is (1) unnecessary, and (2) suggestive of controversy.

17. I turn now to the special objection to these definitions on the score of their involving consciousness as an essential element. On this head Mr. Romanes to some extent disarms criticism by frankly confessing that the criterion of consciousness is practically inapplicable.

> "No doubt," he says, "it is often difficult, or even impossible, to decide whether a given action implies the presence of the mind-element—*i.e.*, conscious as distinguished from unconscious adaptation; but this is altogether a separate matter, and has nothing to do with the question of defining instinct in a manner which shall be formally exclusive, on the one hand of reflex action, and on the other of reason" (*An. Int.*, pp. 11-12).

The facts of the case are these. The more frequently an action is performed the more automatic (instinctive, as we often say) does it become, the more does it tend to pass into stereotyped organic action. Those actions which have been performed, not only by the individual but by a long line of ancestors, whose organisation he inherits, are, or very soon become, completely, or in a very high degree, automatic. On the other hand, those actions which the individual has performed but seldom are effected with difficulty, owing to the imperfect connexions established in the nervous mechanism.

And this is the implication. Since the intelligent acts of the individual have a tendency to become automatic and unconscious, and since among human beings those actions which are performed in virtue of the possession of an inherited organisation are, or have a tendency to become, automatic and unconscious, does it not seem in a high degree probable that some of the instinctive actions of the lower animals, performed at once, and without any process of learning by the individual, in virtue of the possession of an inherited organisation perfectly adapted to perform the necessary response—does it not seem highly probable, I ask, that these instinctive actions, so perfectly automatic, are also unconscious? May not lapsed intelligence carry with it, in some cases at least, lapsed consciousness? And does it not seem unwise, in view of these facts, and in view of the difficulty of applying our complex human consciousness to the problem of mind in the lower animals, to define instinct as reflex action into which is imported the element of consciousness?

While admitting therefore that Mr. Romanes's distinctions are absolute in theory, and agreeing with him that they are

inapplicable in practice, I venture to contend that the practical objections outweigh the theoretical advantages, and that (in accordance with the principle above maintained, that the ejective element should be as far as possible eliminated) we shall do well to endeavour to frame definitions in which the element of consciousness shall be disregarded.

18. I therefore propose the following definitions as sufficient for practical purposes :—

Intelligent actions are those which are performed by the individual, in virtue of his individuality, in special adaptation to special circumstances.

Instinctive actions are those which are performed, through the influence of inherited habit, by the individual in common with all the members of the same more or less restricted group, in adaptation to certain oft-recurring circumstances.

Reflex actions are those which are of the nature of organic responses to more or less definite stimuli, and which involve rather the organs of an organism than the organism as a whole.

Such difficulties as may arise in the application of these definitions are objective and surmountable, not ejective, and therefore, in my opinion, insurmountable.

19. Since it may be objected by some that, by eliminating, so far as is practicable, the ejective element in the study of Animal Intelligence, we rob that branch of science of all vitality, I will here set down some of the problems that offer themselves as subjects of research.

(*a*) The origin and mode of development of intelligent, that is, specially adaptive actions and individual habits; the number of intermediate steps between prompting stimulus and answering response and the amount of their complexity; their careful study in the light of the principles of heredity and evolution; the influence that they have had in the evolution of any given species.

(*b*) The origin and mode of development of instinctive habits; the age at which they manifest themselves; if there is any learning in the case; their occasional liability to error; how far they are due to lapsed intelligence; how far to natural selection; how far to the direct influence of surrounding conditions.

(*c*) The physiology of organisms, that is, the function of each organism in the economy of nature; the relation of the habits of this organism to that organism and to all other organisms.

(*d*) The nature, limits, and ratio of the senses; their

influence in determining the habits and activities of the organism; the mode of their evolution and the influence they have had on the evolution of the organisms which possess them.

(*c*) The study of the organic mechanism, nervous and other, by means of which the habits and activities are carried out.

20. In the study of Animal Intelligence, therefore, I would counsel—

(*a*) The separation of fact from inference.

(*b*) The distinguishing between objective and ejective inference.

(*c*) The elimination, so far as is practicable, of the ejective element.

In accordance with these views I would suggest objective definitions of intelligent, instinctive, and reflex actions, fully believing that with this limitation there remains a wide and extensive field for scientific research.

In conclusion, I may be allowed to state clearly that I by no means deny the existence of animal mind, consciousness, feeling, emotion. I do nothing of the sort. I believe that in general we are justified in supposing that since the dawn of consciousness something analogous to what we know in ourselves as pleasure has been associated with the performance of right actions, and something analogous to what we know in ourselves as pain has been gradually associated with the performance of wrong actions—using the terms right and wrong in their very broadest material sense as 'conducive to welfare' or the reverse. I am, moreover, fully persuaded that my four-footed friends have feelings and emotions distantly akin to and dimly foreshadowing my own. I heartily wish I could know their true nature. But wishing will not make science. It is useless and irrational to fret against the inevitable limitations of our human faculties. The first step towards knowledge is to ascertain clearly what we can know and what we cannot know. This is a step which a certain class of metaphysicians on the one hand, and a certain set of folk who trust entirely to common sense on the other, have not yet taken or will not take. But it is an essential step; and one which no man of science can afford to neglect. The study of Animal Intelligence is scarcely out of the metaphysical stage. I would do my best to raise it into the scientific stage.

III.—CONCEIVABILITY AND THE INFINITE.

By Professor GEORGE S. FULLERTON.

IN an examination of the mathematical antinomies printed in the *Journal of Speculative Philosophy* for January, 1884, I found a solution of those much-mooted problems in the elimination of a contradictory element—the quantitative—which had been inadvertently introduced into our notion of infinity. It was shown that the antinomies arise from the attempt to know the infinite as a whole; that the word 'whole' has necessary reference to limits beyond which there is no more of any object; and that, consequently, the attempt to know all of an infinite is simply an attempt to find the limits of the limitless. It follows, of course, that the infinite is not to be known by a successive synthesis of parts, *i.e.*, by exhausting a quantity; but that, if it is to be known at all, it must be known in some other way. The mathematical antinomies of Kant and Hamilton, reasserted more lately by Mr. Herbert Spencer, when regarded from this stand-point, are disposed of very satisfactorily, and simply disappear; but the question may still be raised whether our notion of infinity does not disappear with them, that is, whether proving the contradictory nature of the quantitative infinite does not simply prove that we have no notion of the infinite whatever, and that our supposed discussions as to infinites are really concerned only with more or less disguised indefinites. This position is not a very sensible one to take, to be sure: for, when a man says of any given object that it is not infinite but indefinite, we usually expect him to know what 'infinite' means, which would intimate that he brought the conception of the infinite before his mind—in some way thought it; and the negative quality of his proposition would imply a true distinction between the conception thus thought and that of the indefinite. But the frequency with which this position is taken, and the confidence with which it is asserted that, the quantitative infinite being proved self-contradictory and the qualitative being inconceivable, we can have no knowledge of the infinite at all, make it desirable that the exact elements of the conception be carefully separated and exhibited, and that it be shown—as it can be—that the conception of an infinite is qualitative, is perfectly conceivable, and that the

act by which such a conception is formed is, in fact, one of our most common mental operations. Those who have maintained the existence of the qualitative infinite as a real conception have been neither few nor far between; but they have not been able to make their doctrine clear to others, nor obtain for it general vogue, partly because they have usually failed to keep the notion free from admixture with other elements quite foreign to it, and partly because they have not made a careful analysis of the actual psychical elements present in the conception, and shown the essential identity of thinking it with other acts which receive general recognition. The question is simply one of psychological analysis, and it is quite possible to discuss it clearly and simply, remembering that our aim is only to find out what is in mind when we habitually use a certain very common word.

The word 'infinite' means endless; and surely it will not be denied that we make a mental distinction between an object thought as having no end at all and one thought as having an end at an indefinite distance. We at least know what we mean by the word 'endless'; and if the word presents any meaning to the mind at all, that to which it is applied must present itself as really distinguished from the merely indefinite. If then, when we speak of the infinite, we mean to say that it is really endless, we cannot know it by a continued addition of parts which may serve to bring us to a limit at some indefinite distance—there is no such limit, definite or indefinite, by the very conditions of the problem; but that which is in mind when we think an infinite must be distinctly different from what is in mind when we add to our previous thought the notion of a limit, and think the indefinite.

Now, when we analyse the mental state in which we have reference to an infinite,—let us say, in this case, an infinite straight line,—we find the following elements: in the first place, there are present the usual qualities of a line, for the fact of our conceiving it as without limits need not alter any of its usual qualities, any more than the fact of our being unable to see the ends of a telegraph-wire need force us to deny that it is a wire of a certain diameter, material or colour; and, in the second place, there is present the notion that, however far we may go in thought, we shall find a continuation of the line; in other words, there is the notion of *unlimited possibility of quantity*—a notion which, be it marked, is strictly qualitative. Quantity in general, not this or that determined quantity, is as much a qualitative

notion as colour or form; and in thus defining the second element present in our notion of an infinite line, I have used the word advisedly to bring out what is a distinctive characteristic of the conception. The word infinite does not denote *a quantity*, but it has reference to quantity; and it cannot, in accordance with its derivation and true signification, be rightly applied to what is incapable of being quantitatively considered. My objection to the usage of the word 'infinite' by some who yet recognise that the conception for which it stands is qualitative, is that they overlook the distinctive characteristic of this conception, which marks it out from other qualitative conceptions; that is, its necessary reference to quantity, though not itself quantitative. If, by that process of abstraction which takes place when I compare objects similar in some of their qualities, I fix my attention upon the other qualities of any finite line, disregarding its length and leaving out of view for the time being its limits, my conception is qualitative; and yet it is not the conception of an infinite line. In this case, so far from affirming infinite length, I do not think of length at all. But in the case of an infinite line, I add to the former complex of qualities a new quality, possibility of quantity in general, not this or that quantity. When I try to bring before my mind the notion of an infinite line, what I am conscious of is this: I represent in imagination a line of indefinite length, and then run mentally along the line representing additional line-portions—which proceeding would give so far, of course, only the finite; but what makes my conception distinctively of the infinite is, that, in this progression, I proceed to fix my attention upon the progression itself, and eliminate by abstraction the limits to which such a progression is subject. I do not, be it marked, merely fix my attention upon other qualities of a line, abstracting from the notion of limits; but I have in mind a progression, a possibility of ever-increasing quantity, and I abstract from the limits of this progression. The two conceptions are distinctly different, although both are qualitative, and they should not be confounded with one another.

The question, therefore, whether I can conceive an infinite line is identical with the question whether I can mentally grasp the usual qualities of a line and the notion of a continuous increase in length, without including the notion of limits: and it will be seen that this question is simply one of the phases of the broader question which is concerned with the possibility of the concept or general notion. A certain complex of qualities being necessary to the existence

of an object as apprehended in nature, or to its subjective existence as represented in the imagination, is there any mental operation by which we may grasp some of these qualities to the exclusion of others, and convey to our own and other minds by the use of the word which stands for this new complex a distinct meaning?

There have been held with reference to this problem, as is well known, three opinions: the doctrine of the Realists, that general ideas have corresponding to them a counterpart reality—a doctrine which may be passed over as now abandoned, though its influence makes itself felt in many directions; the doctrine of the Conceptualists, that, although general ideas cannot exist in nature nor be represented in imagination, yet they have a true mental existence and are the result of a distinct mental operation; and the doctrine of the Nominalists, that the only generality that has a separate existence subjective or objective is the name, which may be applied indifferently to many similar objects.

The Conceptualist may hold that it is possible, unless the words include repugnant elements, to conceive an infinite line,—that is, to grasp in mind a certain complex of psychic elements which are yet incapable of being pictured in the imagination as an infinite line. To think, in the sense of to form such a concept, is to him something other than to imagine. What cannot be imagined may yet be thought. The word 'man', which we define as comprehending the elements of rationality and animality, does not, he claims, in the least include all those other qualities which must be combined with these two before we can picture in the imagination or know as existing any given man. If we select the two qualities in which all the objects of a class resemble each other, and give to these two a special name, have we not brought them into consciousness in some way in which we have not the other qualities possessed by the objects?

When we turn to the Nominalist, it would not be hard to show that, although his doctrines, if taken in strictness, would deny the possibility of the mental operation by which we arrive at the concept, and consequently of the operation by which we may grasp in thought the various elements implied in the expression 'an infinite line,' yet one may find in his teachings by implication ample justification for assuming its possible and actual existence. I will take some extracts from four well-known Nominalists, to show how palpable is the fact stated, and I will first quote from

Berkeley, Locke's great opponent on the subject of the abstract idea:

"Whether others have this wonderful faculty of abstracting their ideas, they best can tell: for myself, I find indeed I have indeed a faculty of imagining, or representing to myself, the ideas of those particular things I have perceived, and of variously compounding and dividing them. I can imagine a man with two heads, or the upper parts of a man joined to the body of a horse. I can consider the hand, the eye, the nose, each by itself abstracted or separated from the rest of the body. But then whatever hand or eye I imagine, it must have some particular shape and colour. Likewise the idea of man that I frame to myself must be either of a white, or a black, or a tawny, a straight or a crooked, a tall or a low, or a middle-sized man. I cannot by any effort of thought conceive the abstract idea above described. And it is equally impossible for me to form the abstract idea of motion distinct from the body moving, and which is neither swift nor slow, curvilinear nor rectilinear; and the like may be said of all other abstract general ideas whatsoever. To be plain, I own myself able to abstract in one sense, as when I consider some particular parts or qualities separated from others, with which though they are united in some object, yet it is possible they may really exist without them. But I deny that I can abstract from one another, or conceive separately, those qualities which it is impossible should exist so separated; or that I can frame a general notion, by abstracting from particulars in the manner aforesaid—which last are the two proper acceptations of *abstraction*. And there is ground to think most men will acknowledge themselves to be in my case. The generality of men which are simple and illiterate never pretend to *abstract notions*. It is said they are difficult, and not to be attained without pains and study; we may therefore reasonably conclude that, if such there be, they are confined only to the learned." (*Principles of Human Knowledge*, Introd., § 10.)

So much for Berkeley's position with respect to the abstract notion. But mark the concessions which he is forced to make in a later section (16):

"But here it will be demanded, how we can know any proposition to be true of all particular triangles, except we have first seen it demonstrated of the abstract idea of a triangle which equally agrees to all? For, because a property may be demonstrated to agree to some one particular triangle, it will not thence follow that it equally belongs to any other triangle, which in all respects is not the same with it. For example, having demonstrated that the three angles of an isosceles rectangular triangle are equal to two right ones, I cannot therefore conclude this affection agrees to all other triangles which have neither a right angle nor two equal sides. It seems therefore that, to be certain this proposition is universally true, we must either make a particular demonstration for every particular triangle, which is impossible, or once for all demonstrate it of the abstract idea of a triangle, in which all the particulars do indifferently partake and by which they are all equally represented. To which I answer, that, though the idea I have in view whilst I make the demonstration be, for instance, that of an isosceles rectangular triangle whose sides are of a determinate length, I may nevertheless be certain it extends to all other rectilinear triangles, of what sort or bigness soever. And that, because neither the right angle, nor the equality, nor determinate length of the sides are at all concerned in the demonstration. It is true the diagram I have in view includes all these particulars, but then there is not the least mention made of them in

the proof of the proposition. It is not said the three angles are equal to two right ones, because one of them is a right angle, or because the sides comprehending it are of the same length. Which sufficiently shows that the right angle might have been oblique, and the sides unequal, and for all that the demonstration have held good. And for this reason it is that I conclude that to be true of any obliquangular or scalenon which I had demonstrated of a particular right-angled equi-crural triangle, and not because I demonstrated the proposition of the abstract idea of a triangle. And here it must be acknowledged that a man may consider a figure merely as triangular, without attending to the particular qualities of the angles, or relations of the sides. So far he may abstract; but this will never prove that he can frame an abstract, general, inconsistent idea of a triangle. In like manner we may consider Peter so far forth as man, or so far forth as animal, without framing the fore-mentioned abstract idea, either of man or of animal, inasmuch as all that is perceived is not considered."

In the former of these two extracts Berkeley has declared himself able to abstract only so far that he can represent to himself in imagination what can exist separately in nature. He denies that he can conceive separately those qualities which it is impossible should exist separately. But when he supposes an objector to ask, How is it possible for something, proved to be true of a particular triangle, to be known to be true of all triangles? he answers that it is seen that neither the right angle, nor the equality, nor the determinate length of the sides is at all concerned in the demonstration. In other words, he admits that, so far as that demonstration goes, we have to do only with those elements in which all triangles agree. And if we can reason about certain elements to the exclusion of others; if we can see that certain objects are alike in certain elements and unlike in others; if we can give a name to objects simply to express the presence of these same elements, however the elements accompanying them may vary,—then surely the elements of the concept have been before the mind in some way in which the others have not, and have been grasped together.

Berkeley frankly admits as much in the concluding sentences of the latter extract,—sentences which were added twenty-four years after the first publication of the essay, when mature reflection, we may suppose, had brought him to see that on his previous principles, strictly held, all comparison of objects differing in any of their qualities would be impossible. If we can consider a figure merely as triangular, without attending to the particular qualities of the angles, or relations of the sides, then we can in some sort divorce the elements included under the general word 'triangle' from the accompanying elements, and consider

them separately. In those last few sentences Berkeley admits all that a reasonable Conceptualist would care to prove, and the words 'abstract idea,' as there used, are equivalent to object of the imagination—a something which is not implied in the formation of the abstract or general notion.

Every one, Nominalist or Conceptualist, must acknowledge that we can compare objects, and recognise them as like or unlike:—not merely like or unlike as wholes, but in this or that element; like in length, unlike in breadth; like in colour, unlike in shape. Now no one claims that we can call into clear consciousness the element of length alone, and picture it divorced of breadth and colour; but when we recognise two objects as like in length and unlike in breadth, the elements must in some way have been present in mind separately, so as to be recognised separately as length and breadth. If one object that what is present in consciousness must *ipso facto* be perceived, and that we cannot perceive length as a factor by itself, nor recall in memory any perception of such a factor during the act of comparison; I answer that what is in consciousness is not necessarily in a clear analytic consciousness; and that we may by a process of deductive reasoning be sure that certain elements are present as factors in a given mental state, while we are yet quite unable to call these elements into a clear analytic consciousness, separated from certain other elements bound to them by long association and habit. As an instance I refer to vision. That distance is itself unperceivable by sight we must admit. That judgments of distance are a result of reasoning from an observed constant connexion of certain visual with certain other elements may be satisfactorily established when the above proposition is admitted. But to call into clear consciousness by itself the purely visual sensation, which forms the basis of the judgment, is altogether impossible. That it is a factor, and an important factor, in the complex consciousness which we have at the time, we admit: and yet its presence, as a single and distinct element, is capable of being only deductively known. Notice a further point which is worthy of remark. If we vary the purely visual element, allowing all other elements to remain the same, that is, if we change the *colour* of the object, but do not change in any respect the form or size of the image on the retina, a difference is at once remarked, and the change of colour recognised. But the difference is not recognised as a difference between two purely visual sensations, when the result of the actual comparison comes out into clear

consciousness, but as a difference in one of their elements between two complexes or wholes. That is to say, the two purely visual sensations cannot be brought into clear consciousness and recognised as compared with each other alone, but only come out clearly as combined with certain other elements in complexes or wholes;—it is the presence of two or more such wholes, which we wish to compare, that primarily conditions the narrowing of the attention to the particular similar or dissimilar elements; and it is from the presence of two or more such wholes, of which we are conscious as compared, that we are led to infer the presence of single psychic elements in a dim unanalytic consciousness, as a necessary condition to the possibility of all ordinary comparison and classification.

When I form the concept of length, by comparing two objects in length and affirming agreement, and then recognising as a distinct element that in which they agree, I certainly do not compare the objects simply as wholes, but compare the *lengths;* and I must certainly have had these elements in mind in some way in which I had not the other elements which go to make up the object. Whether I can call into clear consciousness the psychic elements present during the operation or not, it does not much matter; I evidently have specialised, selected one element from among others, and compared length with length as element with element. The name which we give to such resemblances is the name representing a general or abstract idea.

Hume warmly applauds the position taken by Berkeley with reference to the abstract idea, calling it "one of the greatest and most valuable discoveries that have been made of late years in the republic of letters," and he undertakes to confirm it with proofs that he hopes will put it "beyond all doubt and controversy". For the same purpose for which I have quoted the two extracts from Berkeley, I will quote the last part of the section which he devotes to the establishment of this position:

"It is certain that the mind would never have dreamed of distinguishing a figure from the body figured, as being in reality neither distinguishable, nor different, nor separable, did it not observe, that even in this simplicity there might be contained many different resemblances and relations. Thus, when a globe of white marble is presented, we receive only the impression of a white colour disposed in a certain form, nor are we able to separate and distinguish the colour from the form. But, observing afterwards a globe of black marble and a cube of white and comparing them with our former object, we find two separate resemblances in what formerly seemed, and really is, perfectly inseparable. After a little more practice of this kind, we begin to distinguish the figure from the colour by a *distinction of reason;* that is, we consider the figure and colour together, since they are,

in effect, the same and undistinguishable; but still view them in different aspects, according to the resemblances of which they are susceptible. When we would consider only the figure of the globe of white marble, we form in reality an idea both of the figure and colour, but tacitly carry our eye to its resemblance with the globe of black marble: and in the same manner, when we would consider its colour only, we turn our view to its resemblance with the cube of white marble. By this means we accompany our ideas with a kind of reflection, of which custom renders us, in a great measure, insensible. A person who desires us to consider the figure of a globe of white marble without thinking on its colour, desires an impossibility; but his meaning is, that we should consider the colour and figure together, but still keep in our eye the resemblance to the globe of black marble, or that to any other globe of whatever colour or substance." (*Treatise of Human Nature*, i. 7.)

It is not hard to see that we cannot distinguish in a body figured "many different resemblances and relations," without bringing the resembling elements in some sense singly into thought: if the mental complex which we call an object were an indissoluble unit, we might affirm a general likeness or unlikeness between it and other objects, but we could not affirm that the resemblance lay in the figure, or colour. If, as Hume asserts, the figure and colour "are, in effect, the same and undistinguishable," why do we find the one susceptible of the one class of resemblances, and the other of another class? If we take the words literally, should not the figure, viewed in one aspect, be susceptible of resemblances of figure, and viewed in another, of colour? And similarly, if the colour is one with the figure—the same and undistinguishable,—should not the colour, viewed in one aspect, be susceptible of resemblances of colour, and viewed in another, of figure? Hume's admission that the two elements are known as giving different resemblances in itself refutes his previous assertion that they are undistinguishable. If colour be recognised as like colour, and figure like figure, the two qualities are distinguished as different, and are in reality separately grasped.

I will now take a passage from J. S. Mill's *Examination of Sir William Hamilton's Philosophy* (c. xvii.):

"The formation, therefore, of a Concept, does not consist in separating the attributes which are said to compose it, from all other attributes of the same object, and enabling us to conceive those attributes, disjoined from any others. We neither conceive them, nor think them, nor cognise them in any way as a thing apart, but solely as forming, in combination with numerous other attributes, the idea of an individual object. But, though thinking them only as part of a larger agglomeration, we have the power of fixing our attention on them, to the neglect of the other attributes with which we think them combined. While the concentration of attention actually lasts, if it is sufficiently intense, we may be temporarily unconscious of any of the other attributes, and may really, for a brief interval, have nothing present to our mind but the attributes constituent to the

concept. In general, however, the attention is not so completely exclusive as this; it leaves room in consciousness for other elements of the concrete idea; though of these the consciousness is faint, in proportion to the energy of the concentrative effort, and the moment the attention relaxes, if the same concrete idea continues to be contemplated, its other constituents come out into consciousness. General concepts, therefore, we have, properly speaking, none; we have only complex ideas of objects in the concrete: but we are able to attend exclusively to certain parts of the concrete idea; and, by that exclusive attention, we enable those parts to determine exclusively the course of our thoughts as subsequently called up by association; and are in a condition to carry on a train of meditation or reasoning relating to those parts only, exactly as if we were able to conceive them separately from the rest."

This passage is so clearly in harmony with the views of the Conceptualist, as I have portrayed them, that it seems scarcely necessary to comment upon it. But I cannot resist the temptation to delay for a moment over an inconsistency into which Mill was forced by his attempt to recognise, though a Nominalist, a truth which the Nominalist pure and simple cannot recognise. The formation of a concept, he insists, does not consist "in separating the attributes said to compose it, from all other attributes of the same object, and enabling us to conceive those attributes, disjoined from any others": this position he emphasises by the further affirmation, that "we neither conceive them, nor think them, nor cognise them in any way as a thing apart, but solely as forming, in combination with numerous other attributes, the idea of an individual object". These sentences are certainly unequivocal;—they contain an emphatic assertion of the Nominalistic doctrine. But side by side with such statements we find it asserted that we may fix the attention upon the attributes constituent of the concept, to the neglect of the other attributes of the object, and that, while the concentration of attention actually lasts, if it is sufficiently intense, "we may be temporarily unconscious of any of the other attributes, and may really, for a brief interval, have nothing present to our mind but the attributes constituent of the concept". Surely, if the only elements before the mind are those constituent of the concept; if we may be conscious of these, even for a brief interval, and conscious of these alone;—surely in such a case we conceive, or think, or in some way cognise the attributes forming the concept as separate and apart, and *not*, for the time being, in combination with numerous other attributes. Mill goes even further in the above admission than most of us would care to follow him. In speaking as he does of the process, and not distinguishing between the imagining of an object and the knowing of one or more of its isolated qualities, he

clearly intimates, although he does not distinctly say, that the elements before the mind during the formation or use of a concept are in consciousness in the same way in which the whole complex or object may be in consciousness. But, to recur to the before-mentioned analogy of the purely visual element in vision, we know that, although we may so concentrate the attention as to distinguish the blue colour of one object from the red colour of another, and so must have compared in some rapid manner these purely visual sensations, yet when we try to call into clear consciousness the mere sensation of colour, we cannot do it without imagining the colour as on a surface, or as combined with psychic elements not purely visual. That is to say, the single and separate sensations cannot be called into a clear consciousness, and their presence when we use the concept, or have occasion to compare them singly with each other, is something quite distinct and different from the presence in consciousness of the complex which is knowable as an object. And such would seem also to be the case wherever we call before the mind single psychic elements which can yet not be represented alone in the imagination. The element must have been grasped separately, but it can be brought into a clear consciousness only in combination.

If now we recognise in each of two objects presented to us a certain quality or complex of qualities upon which we can fix the attention; and if we discover that, so far as these qualities go, there is an undistinguishable similarity in the objects, the differences arising altogether from other qualities; why may we not call the complex of qualities in point a *general notion* or *general idea?* Of course, whether we should call the qualities, in the two instances, the *same*, even if undistinguishably similar, would depend on our use of the word 'same,' and our ideas of what constitutes sameness or identity: but I can see no objection to using the words 'general notion' to indicate the fact that a certain complex of qualities is to be found in many different combinations with other qualities. Should it still be insisted that, since we cannot bring separately into clear consciousness these elements of objects known, we have no reason to assume that we actually conceive them or think them separately, I will not quarrel over the use of a word, but will simply state that I find the word 'conceive' a useful one to express that concentration of the attention upon certain qualities of an object, which takes place when objects are compared, and which eliminates from consciousness, or at least subordinates, all other qualities of the objects: and I will so use the word,

applying it to an operation the existence of which Mill has in so many words admitted.

The last author whom I will quote is Prof. Bain: I will take some passages from the chapter on Abstraction in his *Mental and Moral Science* pp. 176-8, where he supports the Nominalistic doctrine:

"We are able to attend to the points of agreement of resembling things, and to neglect the points of difference; as when we think of the light of luminous bodies, or the roundness of round bodies. This power is named Abstraction.

"It is a fact that we can direct our attention, or our thoughts, to the points of agreement of bodies that agree. We can think of the light of the heavenly bodies, and make assertions, and draw inferences respecting it. So we can think of the roundness of spherical bodies, and discard the consideration of their colour and size. In such an object as the full moon, we can concentrate our regards upon its luminous character, wherein it agrees with one class of objects; or upon its figure, wherein it agrees with another class of objects. We can think of the taste of a strawberry, either as agreeing with other tastes, or as agreeing with pleasures generally. . . . .

"Every concrete thing falls into as many classes as it has attributes; to refer it to one of these classes, and to think of the corresponding attribute, are one mental operation.

"When a concrete thing before the view recalls others agreeing in a certain point, our attention is awake upon that point; when the moon recalls other luminous bodies, we are thinking of its light; when it recalls other round bodies, we are thinking of its roundness. The two operations are not different but identical.

"On this supposition, to abstract, or to think of a property in the abstract, is to classify under some one head. To abstract the property of transparency from water, is to recall, at the instance of water, window glass, crystal, air, &c.; to abstract its liquidity, is to recall milk, vinegar, melted butter, mercury, &c.; to abstract its weight, is to bring it into comparison with other kinds of gravitating matter.

"Hence abstraction does not properly consist in the mental separation of one property of a thing from the other properties—as in thinking of the roundness of the moon apart from its luminosity and apparent magnitude. Such a separation is impracticable; no one can think of a circle without colour and a definite size. All the purposes of the abstract idea are served by conceiving a concrete thing in company with others resembling it in the attribute in question; and by affirming nothing, of the one concrete, but what is true of all those others. . . . .

"In abstract reasoning, therefore, we are not so much engaged with any single thing, as with a class of things. When we are discussing government, we commonly have in view a number of governments, alternately thought of; if we notice in any one government a certain feature, we run over the rest in our mind, to see if the same feature is present in all. There is no such thing as an idea of government in the abstract; there is only possible a comparison of governments in the concrete; the abstraction is the likeness or community of the individuals."

It will be noticed that throughout this extract Prof. Bain does not distinguish between those elements of an act which come out into a clear consciousness, and the elements which do not so come out but are nevertheless necessary to the

possibility of the operation. When he says, for instance, that there is no such thing as the idea of government in the abstract, but that we can compare governments in the concrete and recognise the likeness of the individuals, it is perfectly true that all that we are clearly conscious of is several individual objects and a similarity between them; but, when we come to analyse this recognition of a similarity, it will be seen that the elements which are known as similar are quite incapable, by themselves, of forming a concrete object, and yet they are distinguished by the mind from the dissimilar elements: they must, therefore, have been in some sort grasped separately, though they cannot separately be brought into a clear consciousness. Whether, during this rapid act of concentration and comparison, the other elements which go to form the object actually disappear from consciousness, or are only dimly perceived, as Mill suggests that they are in most cases, does not affect the peculiar character of the act. When I compare in height two trees, which I see side by side in the distant landscape before me, I am perhaps conscious of several objects in their immediate vicinity in a dim and indefinite way, but the two objects compared are present in consciousness in a manner very different, and are grasped, so to speak, separately. And when I fix my attention upon the height of the two trees, finding them similar or dissimilar in this one element, we have every reason to suppose that something very analogous takes place, and that this one element is present in consciousness in some way quite different from the others, and is grasped separately, for the time being. Were it not so, we could not say that the trees were alike in height, but different in contour or colour of foliage. We are justified in assuming that, when we recognise two trees as alike in height but not in colour, we have compared height with height, and colour with colour, and not merely compared the one object as an undistinguishable complex of qualities with another object as another undistinguishable complex.

As I have before said, the name which we choose to apply to this operation is of little consequence: the point to be chiefly borne in mind is, that we have here an operation differing from ordinary imagination, in that it takes cognisance of certain psychic elements which can yet not be called into clear consciousness by themselves as a mental picture. Whether the two operations completely differ in their ultimate nature is another question. When the Conceptualist asserts that, though he cannot imagine length apart from breadth or colour, yet he can conceive or think it, he

merely marks by a distinct name his recognition of an operation different from imagination, and which is implied in all comparison of objects. What may be the peculiar psychic elements present in the operation he does not necessarily know, nor express when he uses the name.[1]

Arguing from the analogy of the visual element in vision, one might conclude that what is actually present in consciousness in comparing lengths, for example, is the distinctive element or sensation which is present in combination with other elements (and consequently in a modified form) in all our experience of extended objects, and which, in the act of comparing objects, may be brought into sufficient prominence to be considered, for the moment, alone, and alone compared with its kind. When we make the attempt to call it into clear consciousness, the element appears as modified by, and in combination with, others; but it is not improbable that, in the act of comparison, it obtains in its pure state sufficient recognition to make possible a comparison with a similar element also in its pure state. However, whether we can describe just what is present during the act or not, we may be sure that a mental separation of two objects into their elements is necessary in order to a recognition of them as in some points similar and in some dissimilar.

In view of the foregoing, I would, therefore, regard the fact as beyond all doubt, that there are mental operations differing distinctly from imagination, in that certain elements, of which we have usually, as single elements, no analytic consciousness but which are merged with others into an indivisible whole, are brought for the time being into such prominence as to be compared individually with similar elements and recognised as like or unlike. We cannot hold these up to inspection as single elements, but from the fact of the comparison, about which there can be no doubt, we may be very sure that the operation in question has taken place.

Now when we return to the particular conception that we have been considering,—that of an infinite line,—we find it

[1] Kant seems to have despaired of the possibility of ever making this analysis:—"Dieser Schematismus unseres Verstandes, in Ansehung der Erscheinungen und ihrer blossen Form, ist eine verborgene Kunst in den Tiefen der menschlichen Seele, deren wahre Handgriffe wir der Natur schwerlich jemals abrathen und sie unverdeckt vor Augen legen werden" (*Kritik d. reinen Vernunft:* "Von dem Schematismus der reinen Verstandesbegriffe");—yet Kant did not doubt the existence of the operation.

merely a concrete instance of this general truth which all must either explicitly or implicitly admit. As I have said, the elements constituent of this conception are the usual qualitative attributes of a line and the notion of continued progression, of unlimited possibility of quantity. These elements may be brought into mind, to the exclusion of the notion of limits, which are yet present in all imagined lines and in all intuitions of lines in nature, by employing the usual process of forming a concept. When I think of an infinite line, I first represent to myself a line of some indefinite length, and I then run mentally along this line, adding new portions; that is, I successively think several increasing lengths: I have now before my mind what Hume and Prof. Bain insist upon and make so prominent in forming the concept, several concrete objects similar in some of their qualities. Having mentally passed over several of these line-portions, I then fix my attention, not upon that in which they differ, the quantitative element, but upon that in which they agree, the usual qualitative attributes of a line, and the element of increase or progression, which is common to all. This is precisely what I do in forming the concept man or animal. The concrete objects are compared, their differences eliminated by abstraction, and their likenesses grasped together under a distinctive name. Or I may select one of the qualities in which objects agree and consider it alone, as when I compare men, of the same age and colour, only as to their height, and pronounce them equal in height. If this be possible, if, in using the word man, I can distinguish between that in which men agree and that in which they disagree, and if it be further possible for me to fix my attention upon one of the points in which they agree to the exclusion of others; then it is possible to abstract from the particular quantities or amounts of several lines present in imagination, and think only of a constant increase or progression. That both the one and the other are not only possible but actual operations, is proved beyond possibility of doubt by our constant comparison of objects, our use of general language, our frequent use of the word 'infinite,' to indicate what is clearly distinguished, readily defined, and conveys a distinct meaning to speaker and hearer.[1]

[1] It might be objected that the case cited is not fairly analogous, on the ground that an end is not an actual constituent element of an object, which may exist and be contemplated apart from the other elements. But the sensation of progression in passing the eye along a line is very clearly different from the sensation of arrested motion, of an end to the intuition, and there is no reason why these two sensations should not be separated by

To the objection which may be made to my classing the notion of this or that particular infinite line with the concept or general notion, on the ground that the individual or the intuition is something quite different and distinct from the concept, I answer that the notion of any particular infinite line is not a complete intuition, in that one of the elements of the intuition is eliminated by abstraction; and that when, in the formation of any concept, we fix the attention upon certain elements of an intuition to the exclusion of others, we have in mind, so to speak, a constituent part of an intuition: the fact that we recognise its similarity or sameness with parts of other intuitions does not alter the individual character of the elements which we actually have in mind. The operation of forming a concept and the operation of conceiving an infinite line are in nature identical.

It seems impossible that any one, having reflected upon the fact of his constantly grasping in concepts elements which can yet not be separately imagined, and having, after an analysis of what is in his mind when he calls up the notion of an infinite, discerned the identity of the latter operation with the former,—it seems impossible that such an one should hold infinite space or infinite time to be inconceivable. If, however, he should still object that, even if it be true that we can grasp in thought the notion of progression, and the notion of a line in general, this will give us no knowledge of an infinite line, but will give us only the elements of an incomplete image, which cannot be called distinctly before consciousness, and, therefore, cannot be known as an object at all;—we may answer that, if he feel himself aggrieved because he cannot represent to himself, endowed with all the qualities necessary to an object of the imagination, that which he has already defined as wanting some of those qualities, he must also be unreasonable enough to think it ground for complaint that he cannot in thought make parallel lines meet, or imagine a triangle with four sides. The word 'infinite' means devoid of limits, and it necessarily follows that an infinite line cannot be known as a quantity, consequently not as a whole. Every *object* which is seen or imagined has necessarily limits, definite or indefinite: an infinite line, as infinite, cannot become an object of the imagination. But from this it by no means follows

what Hume was pleased to call a "distinction of reason," and at least the former be held in the attention abstracted from the latter. Whether the latter were wholly eliminated or only subordinated, the complex mental state would still be quite different from that in which the elements have the relative prominence usual in our ordinary experience of objects.

that I cannot call a particular line infinite, provided I have some proof for the fact other than its conceivability, and that I cannot know my conception to be in harmony with the reality. Suppose that, either from testimony, or by means of some *a priori* chain of reasoning, I have good reason to believe a given line endless: I can conceive the line as without end, and I may know my conception, although it does not represent the total content of my consciousness when at any moment I gaze upon this or that part of the line, to be a true and real conception, and in harmony with my experience as I pass over the line; and I may be certain that, however long my experience may continue, it will yet not prove incompatible with the conception I have formed. In this sense any infinite object is conceivable, and there would seem to be no other conceivable way in which we could conceive it: an infinite object which could be known as a whole is not even an object of thought, for the elements indicated by the words cannot be so put together as to express a meaning. But the conception of the infinite, rightly defined, contains in it nothing either contradictory or beyond the grasp of the human mind, and is, indeed, a very common conception, as is evidenced by use of the word in literature ancient and modern, to say nothing of its constant occurrence in the debates of those very philosophers who find the conception such a stone of stumbling. And that the conception is a real one, having a real consonance with experience, those who hold to the Christian doctrine of Immortality will not be slow to maintain.

IV.—THE HISTORICAL METHOD.

By Professor H. Sidgwick.

A critical reader—holding with Knies[1] that a 'Historical Method' ought, in strictness of language, to mean a method of studying history—may possibly object *in limine* to the presence of this paper in a Philosophical Journal. Such an objection certainly deserves an answer, since the antithesis between the 'historical' and the 'philosophical' view and treatment, either of the facts of external nature or of the life of man and human society, must be admitted to be ancient and orthodox. And it is convenient to give my answer to the objection at once; because this answer is in fact my reason for selecting this subject for discussion. I find that this antithesis between 'historical' and 'philosophical' is not only ancient but antiquated: it does not correspond to the prevailing tendencies of educated thought in the present age. For if we are to define the scope of Philosophy *neutrally* —*i.e.*, so as to avoid implying any of the disputed assumptions of particular philosophical schools—we can only define it as the study in which the principles, methods and main results of the special sciences and departments of systematic thought are compared with the view of reducing them, so far as possible, to a higher unity of system. And, if we accept this or some similar definition of Philosophy, it may, I think, be truly said that a belief in the Historical Method is the most widely and strongly entertained philosophical conviction at the present day.

In speaking thus of a 'belief in the Historical Method' I may seem to have used a very vague phrase; but I have done so deliberately. Generally speaking, when we try to fix in impartial language, for the purpose of examination, a prevalent philosophical opinion of recent growth, we have to submit to a certain initial vagueness in our conception of it. To get rid of this vagueness will be the main aim of this paper; but if I tried to get rid of it at the outset by the exactest possible definition, I should inevitably alter the object that I am proposing for examination: I should turn it into a doctrine either more limited in its acceptance

[1] In the last edition (1883) of his *Politische Oekonomie vom geschichtlichen Standpunkte*, p. vi.

or more limited in its application, and should thus either impair its claim to be called prevalent, or diminish its claim to be called philosophical. From a philosophical point of view, the characteristic that concerns us most in the prevalent belief in the Historical Method is that it is held to have, in some sense and some degree, a universal application—that, as its admirers say, it has "invaded and transformed all departments of thought". It is undeniable that in every department of thought either the objects of our present thought or our thoughts about them, or both, are conceived by us as a present that has had a past different from it; and it is therefore a *primâ facie* tenable view that in all cases, in order to understand rightly this present, the essential thing is to study the past that has led up to it and contemplate the present in the light furnished by this study; and it is on the general and eager—if inevitably somewhat indefinite—acceptance of this view that the deepest influence of the Historical Method depends, and its deepest interest for students of philosophy.

For if this breadth of scope and this height of pretension be admitted, the Historical Method cannot, I conceive, really leave room for any important and effective philosophical method distinct and apart from it. It is true that some of the most eager advocates of the Historical Method take pains to explain that they not only leave room for Philosophy, but even concede the first rank to it, as the more dignified and profound inquiry: they confine themselves merely to the relative and phenomenal, and—with the utmost formal courtesy and humility—leave the whole sphere of absolute being for philosophy to study. But this humility and courtesy is, I need hardly say, ironical: the absolute thus left is known to be unknowable; the egg thus offered for simple-minded philosophy to brood over is known to be addled. If we are to admit the claims of the Historical Method, in all the breadth and fulness with which they are widely asserted, we must admit that it is or includes the only available philosophical method, in the present state of our knowledge.

It is this largest conception of the scope and aims of historical study which I propose to begin by examining; for though I shall presently come down to a narrower conception—which has, I think, still more general acceptance—it appears to me that this narrower conception will be most easily and clearly dealt with if we approach it through the wider.

Let us take, then, in order the chief departments of

science, and consider briefly how far it is true that they have been "invaded" by the Historical Method.

To begin: it is obvious that no such invasion has taken place, or is threatened, in the department of pure mathematics—the sciences of space, number, abstract quantity. The objects of these sciences, the relations which they investigate are, of course, independent of time: they cannot be conceived as having had a past different from the present. Our conceptions, no doubt, of these relations have had a history; and in the general increase of historic interest, which is certainly characteristic of our age, this branch, among others, has received its share of attention. But whatever philosophic aim the students of the past history of mathematics may propose to themselves, they certainly do not propose to modify the received method of mathematical reasoning by the introduction of a historical element, or to support the fundamental assumptions of mathematics by arguments drawn from history, or to explain anything that may seem unexplained or arbitrary in these assumptions by a reference to the process of development through which they have passed.

Much the same may be said of the fundamental universal premisses which we use in our general reasonings about the material world—the laws of motion, or the law of gravitation. We conceive such laws to have operated unchanged through all conceivable time; and whatever doubts and disputes may exist either as to the exact way in which such laws should be formulated, or the exact nature of the evidence on which they rest, no one supposes that this doubt and conflict admit of being solved by any knowledge of the process of development through which our physical conceptions have come to be what they are.

The case is different when we contemplate the physical universe as a particular concrete fact, and seek for an explanation of its concreteness and particularity: when we ask why there should be sixty-four or more different kinds of matter, distributed so apparently arbitrarily and irregularly through the spherical mass on which we are carried about in space, and why there should be—as astronomy declares—a no less irregular and arbitrary distribution of this or other matter through the rest of space. Here no doubt we have a problem for which many inquiring minds have sought a solution in history—in the wide sense in which I am now using the term: they have hoped to find by studying the processes of change through which the physical universe has passed an explanation of the complex of irregular differences which its

actual condition exhibits. But whatever success they may have had in tracing back the past states of the physical universe has not really helped them a step towards a philosophical solution of this problem: all they have done is to change one particular mode of arbitrariness and irregularity for another no less apparently unaccountable.

This negative result, indeed, is not always plain at first sight. *E.g.*, when we first consider the formula in which Mr. Spencer generalises the process through which the physical universe has passed, and contemplates matter "passing from an indefinite, incoherent homogeneity to a definite coherent heterogeneity," it seems at first as if our complex of arbitrary differences would be ultimately simplified away if we could retrace this process far enough back. But reflection shows that the "indefiniteness" which Mr. Spencer attributes to primæval matter is not a condition of matter as we conceive it to have existed, but only relates to its apprehension by our limited intellects—if we conceive any particle of matter as existing at all, we of necessity conceive its spatial and dynamic relations as perfectly definite. Similarly, we are forced to conceive every particle of matter as always in a sense coherent—that is, connected by dynamic relations—with every other particle; and whatever heterogeneity the whole aggregate now possesses requires us to suppose a corresponding heterogeneity at every point of the process of complex motion through which it has passed in time. The process which Mr. Spencer describes as a process from the homogeneous to the heterogeneous is a process which may increase the *amount* of difference between the parts of space compared, in respect of their occupation by matter; but it is not a process that can *originate* difference. With whatever confidence we may give the rein to the most audacious of speculative astronomers, and under his guidance sweep back through eras of time to the most diffused of nebulæ, we shall yet find in the nebula with which we leave off a complex of apparently arbitrary and irregular differences, needing explanation just as much—or just as little—as the particularities of our actual planet, rolling in the "gleam of a million millions of suns".

In saying this, I do not mean in any way to depreciate the interest and importance of attempts to trace out the past history of the cosmos, by speculative geology and speculative astronomy combined: I merely point out that, whatever degree of success may crown such efforts, there is no prospect that they will either tend to solve the philosophical problem prescribed by the actual particularity of the cosmos, or

in any way affect the received methods of rational physics or the received methods of chemistry.

But what shall we say of the sciences that deal with organic life? Is it not true that zoology and botany have been invaded and transformed by the Darwinian theory, and all the speculation and investigation about the development of organic life to which it has given rise? It is certainly true that this historical biology—if I may be allowed the term—has wrought a change in our general conception of the actual differences in the organic world to which no parallel can be found in the sciences which deal with inorganic matter. For no hypothetical history that has been offered us of the inorganic world has even professed to explain the qualitative differences with which chemistry is concerned; at least it has not professed to explain them by any method resting on an empirical basis and capable of being tested by facts. Whereas the hypothetical history of the organic world which we owe to Darwin does attempt to show how differences of kind, in the matter with which it deals, have been developed out of an original identity; or, more strictly, it aims at showing how differences in external relations, in situations and circumstances, have been taken in and transformed into differences of internal relations, differences of organisation.

Still, I should not exactly say that the historical or evolutional method of biology has invaded and transformed previously existing departments of knowledge; it rather seems to have annexed to science a new and important region, hitherto desolate and only viewed as it were from a sort of philosophic Pisgah as possibly destined for orderly scientific cultivation. Whatever positive systematic knowledge of living things was thought to be given us by zoology and botany, pursued on pre-Darwinian methods, is in no way invalidated or set aside by the newer speculations: what has been invalidated is merely the negative conception of ultimate irreducibility in specific and generic differences. And I may add that our knowledge of the history of life on this planet had made even this negative conception philosophically untenable, long before Darwin's theory was produced; for it had become evident from the geological record that we could not deal with organic as with inorganic differences of kind, by throwing them back to the inscrutable origin of all things. Our existing fauna and flora must be held to have appeared on the planet after long periods of time in which pre-existing species had lived and died out: they could not have trooped in, as we know them, on the most conveniently arranged

fleet of meteors : they must therefore have come into being on the planet : but how ? ' Special Creation ' was a popular answer ; but, scientifically considered, special creation was a purely negative notion : it simply denied a causal relation between the novel fact, the newly existing species, and all antecedent cosmical facts : and no philosopher could accept such a denial, at least without evidence which can hardly be conceived and certainly could not be produced. But if the new organism was not, physically speaking, uncaused, it must be causally related either to pre-existing inorganic matter, or to other organic life : these were the only two alternatives, and of the two the latter was indefinitely more probable even before we had any evidence from which we could infer the particular nature of this causal connexion.

Hence the new history of organic life which the Darwinian theory gave us, so far from invalidating anything that we had before taken for positive knowledge of living beings, did not even meet, in philosophically trained minds, with any negative prepossessions that had to be overthrown.

It may be thought, however, that—even granting what I have just urged to be true of the study of organic life generally—it cannot be true of the living being that interests us more than all the rest, of man. Surely, it may be said, if we admit that man has been gradually developed out of an ascidian, or other low organism, the old conception of a dual nature of man, a mysterious combination of spirit and body, has to be given up : materialism clearly wins in its old conflict with spiritualism. I know that this is a popular inference from the Darwinian theory ; but I cannot see that it has any philosophical basis. However completely we accept the theory, all the really philosophical obstacles in the way of a purely materialistic view of man appear to me to remain unchanged. It remains true, as Mr. Spencer says—and the statement is perhaps more impressive as coming from him than if made by a more idealistic philosopher—it remains true that psychical facts, as known to us by " subjective observation and analysis " have no " perceptible or conceivable community of nature " with physical facts, ascertained by objective observation and analysis : it remains true that—as the same writer says—" of the two it seems easier to translate so-called matter into so-called spirit, than to translate so-called spirit into so-called matter (which latter is, indeed, wholly impossible) ".[1]

Still, it may be replied, even granting the untenability of

[1] *Princ. of Psychology*, §§ 41, 63.

mere materialism, the Darwinian theory of the origin of man renders it impossible for us to conceive of the continued existence of the individual man after his physical death. We cannot attribute a soul to the ascidian or other aquatic progenitor; and if man has been developed by gradual changes out of such a being, there is no point in his history at which the independent existence of his soul can be conceived to begin. Therefore, however the metaphysical issue between materialism and idealism may be settled or left unsettled, at any rate, Evolution has eliminated the old belief in the immortality of the soul; so that materialism wins on the only point of any practical importance to a plain man.

If historical biology had achieved this result, I should recognise that it had invaded with tremendous effect our study of man and his destiny; but the supposed achievement appears to me quite illusory. I admit that there is a certain difficulty in accepting the common conception of man's dual nature, owing to the gradual development of his physical organism out of a portion of organised matter to which soul cannot be attributed; but this difficulty was always, I conceive, presented in full force by the known history of any individual organism, and I do not see that it is materially increased by the completest acceptance of a similar gradual evolution of the human species. The process by which the admittedly soulless organism grows into that supposed to be soul-possessing is indefinitely more rapid in the case of the individual; but I do not see how this difference in rate of change affects the difficulty of conceiving how the connexion of immortal soul with the gradually changing material organism commences.

I conclude, then, that the historical method, as applied to anthropology on the basis of Darwin's theory, leaves the metaphysical problem of the relation of mind and matter exactly where it was. It remains to consider how far our study of the nature of mind, so far as it is an object of empirical knowledge, of "subjective observation and analysis," is affected by investigation of its past history. This investigation of the origin and growth of mental phenomena or faculties, as is well known, has occupied a large share of the attention of English psychologists since the middle of the last century; and has attained results of undoubted interest. But the psychological importance of these results has often been misconceived, owing to a fundamental mistake of method to which no parallel can be found in the investigation of the material world. In physics or physiology there is no danger of confounding the question as to the actual

condition and relations of the things that we are examining with the question by what process they have come to be what they are: the actual resemblances and differences between (*e.g.*) an ape and an ascidian remain obviously just the same whether we affirm or deny that the former has been developed out of the latter. But in the investigation of mind—owing to the greater difficulty and obscurity of subjective observation and analysis—a confusion of this kind has been possible and has actually taken place. When it has been shown with more or less probability how thought may have gradually grown from sensation, rational choice from instinctive impulse, altruism from egoism, it has been hastily inferred that the nature of thought, will, disinterested desire is somehow altered by the discovery of their historical antecedents: that these later and higher mental facts are not what they seem, what subjective introspection and analysis declare them to be, but something different—namely, the more primitive phenomena which have preceded them in development: that thought is a species of sensation, altruism a species of egoism, and so forth. It always seems to me that this inference, though it has been widely made, admits of no justification when the question of its legitimacy is once distinctly raised. As I have elsewhere said (*Methods of Ethics*, 209), it seems to have been encouraged "by an infelicitous transference of the conceptions of chemistry to psychology: the later mental phenomenon is supposed to be a quasi-chemical compound of the antecedent phenomena from which it has been derived. But in chemistry this conception is legitimated by the ascertainable equality in weight between compound and elements and the possibility of substituting the latter for the former: but no such reasons exist—nor any others that I know of—for considering psychical antecedents as really constitutive of their psychical consequents in spite of their apparent dissimilarity."

But, it may be said, granting that the question what our thoughts, emotions or volitions actually are cannot be affected by any investigation of the process by which they have come to be what they are, still such investigation may have an important bearing on the more interesting because more difficult question, whether they are what they ought to be. The method of introspective observation, it may be said, has commonly professed to do more than give us a mere inventory of our thoughts; it has professed to give us a criterion for determining their validity; and it is this pretension rather than the former that has been successfully

traversed and overthrown by historical psychology, or 'psychogony'.

And, no doubt, the most interesting part of the controversy between the 'psychogonical' and 'introspective' methods of studying mind has had reference to this question of the validity of beliefs commonly taken as primary and intuitive.

Let us consider, then, how far and in what way the validity of such beliefs can be affected by an investigation of their history.

At this point of the discussion, however, it becomes necessary to distinguish a narrower meaning of the term 'Historical Method,' which I have hitherto used in the widest possible sense, to include any study of the past pursued with a view to the explanation of the present. It is in this widest sense that the philosophical pretensions of historical study are most obvious and obtrusive. But there is a narrower and more ordinary sense, more in harmony with the current use of the word 'history' unqualified, according to which 'Historical Method' would imply a study not of past facts generally, but of past social facts: and it is with this narrower meaning that the current enthusiasm for the Historical Method, the current references to its invasive and transformative properties, are perhaps most frequently connected. Now in this narrower sense I should certainly say that the Historical—or, as it might for clearness be better to call it, the Sociological—Method has successfully invaded, during the last generation, the peculiarly English study which I have called psychogony: the inquiry into the growth and development of mind.

For perhaps the most noteworthy change that has taken place in this study during the last thirty years, consists in the increased recognition of the fundamental importance of the 'social factor' in the development of the mind of the individual. It could not, indeed, have ever been denied that a most important part of the conscious thought and feeling of any individual received its character—whether by inherited tendencies or by sympathetic apprehension or both combined—from the current thoughts and prevalent emotions of the society of which he was a member; and that, accordingly, any adequate attempt to trace the development of his conscious life must soon include or pass into a sociological investigation. This, at any rate, is recognised in the work of J. S. Mill, from which, a generation ago, I and many others learnt our "Logic of the Moral Sciences". That "what we now are and do" is "the result mainly of the

qualities produced in us by the whole previous history of humanity," Mill, after Comte, enforced with as much emphasis as could be desired. He seems, however, to have held that the sociological laws obtained by a study of this history of humanity ought to be shown to be derivative from certain ultimate laws of human nature, independently ascertained: since—to quote his words (*Logic*, ii. 466)—"men, in a state of society, are still men: their actions and passions are obedient to the laws of individual human nature. Men are not, when brought together, converted into another kind of substance, with different properties; as hydrogen and oxygen are different from water, or as hydrogen, oxygen, carbon and azote are different from nerves, muscles and tendons. Human beings in society have no properties but those which are derived from, and may be resolved into, the laws of the nature of individual man".

Now it is undeniable that the aggregate of the actions of man in society constitute a more complex fact than the aggregate of the actions of any single individual; society being the whole of which individuals are parts. But it does not follow that, as Mill conceives, a psychology exists or can be constructed independent of sociology, and such that all the laws ascertained by the latter are capable of being resolved into the more elementary laws of the former. In saying that "men in a state of society are *still* men," it is implied that we have some means of knowing them adequately *out* of a state of society: just as—to take Mill's analogy—we are able to ascertain adequately the properties of hydrogen and oxygen, apart from their composition in water. But I cannot perceive that we have any such means of knowing the properties of men in this supposed elementary, non-social, condition,—so far, at least, as the most important and interesting departments of their mental life are concerned. The men whom we are able to observe are all social beings who have grown up from infancy under social influences: and, if in studying the mental phenomena of such a being we abstract hypothetically all that is due to sympathy and imitation and endeavour to ascertain the laws of what remains, the result we obtain will not carry us far towards explaining the thoughts and emotions of actual men. We may perhaps study, without taking the social factor into account, the conditions and laws of sensation, appetite, volition in its most elementary forms, and the revival and association of such phenomena: but if we contemplate any of the processes of thought that involve language, or any of the more refined and complex emotions, and endeavour to ascertain the causes

of their actual characteristics, we are inevitably carried from the study of the mere individual into the study of the society of which he is a member. The current beliefs, the prevailing sentiments, in a given society at a given time, are no doubt beliefs and sentiments of a certain aggregate of individuals: but we have generally speaking no means of tracing and explaining their development and diffusion in the consciousnesses of the great mass of individuals who entertain them: for the purposes of our cognition, they must be treated as social facts.

On this point there is not, I conceive, any dispute, at the present day: nor is there any doubt that the investigation of the laws of change in the prevalent beliefs of human societies is a most important element of the whole study of sociology —or of history, in the ordinary sense. Nor, again, is there any doubt that this study, being a department of history, ought to be pursued according to a historical method.

But much more than this is, I understand, generally maintained by the writers who have recently emphasised the claims of the Historical Method in different departments of the theory of practice: in ethics, jurisprudence, politics. They have meant by it not merely a method for ascertaining the sequence in which beliefs have actually succeeded one another as social phenomena, and the causes or laws of this sequence; but also a method for determining—what, after all, is the most interesting question with regard to any class of human beliefs—*viz.*, how far they are true or false. It is, as thus regarded, that the Historical Method—in the narrower sense in which I am now using the term—occupies the place and undertakes the business of philosophy: since the part of that business that has the widest practical importance is the establishment of criteria of the truth or falsehood of current beliefs.

How, then, can an inquiry into the history of our beliefs affect our view of their truth or falsehood? To simplify the consideration of this question, let us divide it by the most fundamental distinction that can exist between classes of beliefs: let us ask, first, how far the historical study of beliefs leads us to regard them as untrustworthy, and secondly, how far it tends to prove them true and trustworthy.

Now it seems to me that the historical study of human beliefs, in some very important departments of thought—such as ethics, politics and theology—does tend to be connected with a general scepticism as to the validity of the doctrines studied; but the exact nature of the connexion

is difficult to determine: the scepticism is, I think, partly the effect and partly the cause of the concentration of the student's mind on his historical research. It partly tends to result from historical study, because of the vast and bewildering variety of conflicting beliefs, all strongly, even unhesitatingly entertained at certain times and places, which this study marshals before us. The student's own most fundamental and most cherished convictions seem forced, as it were, to step down from their secure pedestals, and to take their places in the endless line that is marching past. Other conflicting convictions, for which their holders have been ready to die, have gone before and are out of sight: others as shortlived are coming after, which the transient generations ahead will probably embrace with equal tenacity. Thus to the historian who is an animal of larger discourse than the plain man, looking before and after in a fuller sense, the whole defiling train of beliefs tends to become something from which he sits apart, every portion of which has lost power to hold his own reason in the grip of true conviction: for peace's sake, he accepts the beliefs that are pressed on him by public opinion in his own age and country; but in his heart he believes in nothing but history. I think that some effect of this kind is actually produced, in varying intensity, on the minds of many students of the history of opinion: but I cannot regard it as normal and legitimate—indeed I doubt whether even those who feel this sceptical effect most strongly would usually maintain their scepticism as a conclusion attained by any explicit rational procedure, admitting of logical tests. I should rather regard the Historical Method, in this sceptical application, as a kind of disorder which is liable to attack—if I may so say—weakly organised systems of thought, while it is powerless against stronger organisms. For historical study has no similar sceptical effect in such departments as mathematics and physics: whatever bizarre opinions, conflicting with our own, historical study may unearth in other ages and countries, they have no tendency to shake our confidence in our own methods and conclusions: but in departments where dispute and perplexity exist among ourselves, where persons of equal ability and education are at issue on most fundamental points, the scepticism primarily generated by present controversies and variations of opinion does, no doubt, draw nutriment from the ampler range and greater complexity of variation which the history of doctrine brings before us. And thus, as I have said, the historical study of beliefs in such departments as ethics, politics, or theology is sometimes the

effect as much as the cause of this kind of scepticism: the mind, wearied of the vain effort to ascertain what is true, settles down more and more to the task of ascertaining what has been held; here at least, the student feels, some steady progress and stable results may be hoped for.

This is human and natural enough: but it is human surely in a bad sense—human weakness. Conflict and controversy on fundamental points, with adequately trained subtle and penetrating intellects, afford adequate grounds for self-distrust, for circumspection, for re-examination of our fundamental assumptions and methods, for continued patient efforts to enter into the point of view of opponents; but they are surely not adequate grounds for the abandonment of the highest interests of reason and humanity.

Nor do I regard this sceptical effect of the historical study of human thought as its main or normal effect: were it so, the prevalent enthusiasm for the Historical Method would be quite unaccountable. This is rather due to the conviction that the proper study of history, and that alone, has the gift of healing the scepticism which the history of beliefs, if crudely and superficially apprehended, no doubt tends to aggravate: that it will yield the patient and duly trained inquirer a clue through the maze of opinions, a criterion by which he may find truth at the last.

Now I quite admit that a study of the development of human opinion in any department may give us valuable confirmation for conclusions otherwise arrived at as to the right procedure for attaining truth in that department: but I do not see how such conclusions are to be established in the first instance by a purely historical method. For let us suppose realised the utmost hopes of the most sanguine student of the science of history: let us suppose that we have ascertained completely the law of development of, say, ethical and political opinion, so that we can state accurately the maxims of conduct, private and public, which will be generally accepted by the coming generation. We cannot therefore take the foreseen current opinion to be true, any more than the opinion now current: and it would be peculiarly hard for the historical student to do this, as he would do so under the condition of having to hold at the same time that the dissimilar opinions prevalent in previous ages were untrue so far as dissimilar.

This argument is sometimes met by saying that the divergent beliefs of different ages and countries are "true relatively"—in relation, that is, to the stage of development of a particular society at a particular time. But the phrase

only veils the difficulty—and veils it very thinly. For by 'relatively true' we must mean either 'partially false but yet expedient' or 'partially false but the nearest possible approximation to truth'. But to know that an ethical or political belief is expedient though false we must know that it is the best available means to the attainment of a right end: similarly to judge on adequate grounds that a belief is partially or approximately true, we must know what is so wholly or completely. Hence the historian who pronounces on the 'relative truth' of any current beliefs, implicitly claims to know the really valid practical principles partially hidden from the holders of such beliefs: and my point is that the study of the historical sequence of beliefs cannot by itself give him this knowledge.

It may be said, however, that, though the history of beliefs cannot by itself furnish us with a criterion of their truth, still the comparative study of different departments of systematic thought may furnish such a criterion, if we only admit the validity of such currently accepted reasonings or systems of thought as have emerged from the state of fundamental controversy: *i.e.*, the established and recognised sciences, as to whose methods there is no longer any general dispute or doubt among educated persons. By studying the development of these successfully organised bodies of thought we may learn to develop rightly those other parts of our thought that are still imperfectly organised, still struggling with fundamental perplexities.

It is in this way (*e.g.*) that Comte obtains his generalisation as to the "three stages" through which a science has to pass: according to him the sciences now clearly established are so because they have arrived at the positive stage, after passing through the theological and metaphysical stages; whereas politics is still partly in the metaphysical stage, and ethics even in the theological. He draws, therefore, from history the simple lesson that these backward studies should follow the course of development of the more successful physical sciences and become positive in their method.

Now I do not dispute the general reasonableness and utility of the kind of comparison which Comte inculcates and exemplifies: but I am unable to learn from it the particular lesson that he commends to our attention, or indeed any other of equally decisive importance. For the most fundamental controversies in ethics and politics relate to the ultimate end, to which all particular rules and institutions are to be regarded as means, and which therefore gives the standard by which they are to be tested:—thus it is dis-

puted whether this end is happiness, an aggregate of pleasures realised in successive parts of time in the lives of different individuals; or whether it is some different result of development, some universal good which is the good of each because it is the good of all, and not the good of all by summation of the goods of individuals. How, then, can the settlement of this controversy be furthered by a study of the history of the established sciences so far as they are really established by agreement of experts? If, indeed, it were established that, as some thinkers hold, all sciences begin with and rest upon universal intuitions or necessary assumptions, or again that, as others contend, they all start from and are based upon cognitions of particular facts, either methodological generalisation might have weight in the ethical controversy. But these generalisations are notoriously the subject of controversy as much as the fundamental principles of practice: nor can we discuss them without entering deep into the metaphysics which Comte repudiates. Taking the established sciences simply so far as their establishment is cognisable as a social fact—*i.e.*, so far as their method is beyond the range of admitted controversy,—we find in them diversity, not identity of methods: in some cases the premisses, reasonings and conclusions are all universal; in others all the generalisations attained are admittedly based on particular experiences and tested by agreement with these. Thus a survey of the sciences does not even supply us with a decided analogy to aid us in our discussion of ultimate practical ends. Nor is it easy to say how this subject is to be treated by a "positive" instead of a "metaphysical" method. Ultimate ends are not, as such, phenomena, or laws or conditions of phenomena: to investigate them as if they were seems as futile as if one inquired whether they were square or round.

A positivist would perhaps reply that the question 'What *ought* to be our ultimate end?' cannot indeed be treated positively, as it introduces just the metaphysics that Comte wishes to eliminate: but the question 'What *is* the end or ultimate result to which the development of society is actually tending?' is a question of fact, and it is this that the science of history or sociology claims to answer. This is, indeed, a most important question, and one on which I would anxiously learn all that sociology has to tell: but I do not see how anything that it can tell can give us *positive* principles of practice. It may, indeed, give us valuable negative guidance, for it may warn us from aiming at the impossible. What is to be must be, and it is idle to fight against

it: but that is no reason why we should labour to hasten its coming unless we know that it will be an improvement on the present: and this we cannot know unless we bring to our sociological inquiry a criterion of political good and evil which we certainly cannot obtain from it.

It must be admitted that some advocates of the Historical Method—especially in the department of politics—avoid the difficulties that I have been discussing, by a very simple expedient. They assume the ultimate end of political institutions to be known—whether they call it general happiness, social well-being, development of national life or of humanity, or by some similar current term; they assume that it is accepted by all reasonable persons and conceived by them with sufficient definiteness for practical purposes. The business of the political thinker, in their view, is then merely to determine the best means to this end, and it is for this that they recommend him to rely on history. This more limited claim falls considerably short of the philosophical pretensions which led me to take the Historical Method as a subject of discussion in these pages: and it hardly comes within the scope of my paper to examine it fully. No one, I conceive, would reject it altogether—at least I know no political thinker so anti-empirical as to maintain that the guidance of history is of no value in the practical application of political principles. It may, however, be worth while to state briefly the general reasons why I do not think that the art of Politics ought to be primarily based on the study of political history,—even assuming that we already know with sufficient definiteness the end to which political institutions are means. I hold this not so much on account of the inevitable defects of this study—the difficulty of ascertaining past events with sufficient fulness and accuracy to enable us to establish trustworthy generalisations as to the laws of co-existence or succession of the different elements or features of political society, or the laws of their effects on human happiness, or good however defined: but rather on account of the very characteristic which gives the history of civilised mankind its special interest for the philosopher—*viz.*, that it is concerned with that part of the knowable universe in which change most distinctly takes the form of progress. For from this continual progress of human society it follows that each age has its own problems, in the solution of which it can only obtain a doubtful and indirect assistance from a study of preceding ages. Thus, even granting that history scientifically treated may enable us to decide, at least roughly and approximately,

how far particular laws and institutions have tended to promote human happiness—a good otherwise interpreted in past ages; we cannot hence legitimately infer, in any direct, simple and cogent way, what structure or mode of action of government is likely to be most conducive to happiness here, and now. This, indeed, is just what advocates of the Historical Method have often emphatically maintained: they have been forward in urging that the value of all political institutions is 'relative,' and that those best adapted to promote social well-being in any given age and country may be highly unsuited to different circumstances, and a different stage in the development of human society. But if this be so, it appears to me to follow that we must seek elsewhere than in history for the primary scientific basis of the political art. We may—indeed we clearly ought to—appeal to history for confirmation of correctness of conclusions otherwise arrived at: but we shall, I submit, more clearly and easily learn the real lessons which it has to give, if we avoid asking from it instruction which is beyond its power.

V.—RESEARCH.

THE TIME TAKEN UP BY CEREBRAL OPERATIONS.

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Mental states correspond to physical changes in the brain. The object of this paper is to inquire into the time needed to bring about changes in the brain, and thus to determine the rapidity of thought. When waves in the luminiferous ether of a particular length strike the retina a red light is seen, but a certain time passes after the waves have struck the retina before the light is seen:—(1) It takes time for the light waves to work on the retina, and generate in the cells a nervous impulse corresponding to the nature of the light; (2) it takes time for the nervous impulse to be conveyed along the optic nerve to the brain; (3) it takes time for the nervous impulse to be conveyed through the brain to the visual centre; and (4) it takes time for the nervous impulse to bring about changes in the visual centre corresponding to its own nature, and consequently to the nature of the external stimulus. When these changes are brought about a red light is seen. It does not take any time for a sensation or perception to arise after the proper changes in the brain have been brought about. The sensation of a red light is a state of consciousness corresponding to a certain condition of the brain. The chemical changes in a galvanic battery take time, but after they are brought about, no additional time is needed to produce the electric current. The current is the product of chemical changes in the battery, but at the same time the immediate representative of these changes; and the relation is so far analogous between states of consciousness and changes in the brain. Again, as it takes time to see a light, so it takes time to make a motion. Changes in the brain, the origin and nature of which we do not understand (physiologically they are part of the continuous life of the brain, mentally they are often given in consciousness as a will-impulse), excite the centre for the coordination of motions. The impulse there developed is conveyed through the brain (and it may be spinal cord) to a motor nerve, and along the nerve to the muscle, which is contracted in accordance with the will-impulse. We have here in the reverse direction the same four periods as in the case of a stimulus giving rise to a sensation. In each case there is the latent period in the sense-organ or muscle, the centripetal or centrifugal time in the nerve, the centripetal or centrifugal time in the brain, and the time of growing energy in the sensory or motor centre. Besides these

two classes of processes, the one centripetal, the other centrifugal, there are centrimanent cerebral operations, some of which are given in consciousness, and make up the mental life of thought and feeling. These cerebral changes all take time, and, as I shall show, the times can in many cases be determined.

I. *Apparatus and Methods.*

The time taken up by cerebral operations cannot be directly measured. It is necessary to determine the time passing between the production of an external stimulus, which excites cerebral operations, and the making of a motion after these operations have taken place. The apparatus needed to determine this time must consist of three parts:—(1) An instrument producing a sense-stimulus to excite cerebral operations and registering the instant of its production; (2) an instrument registering the instant a motion is made, after the cerebral operations have taken place; and (3) an instrument measuring the time passing between these two events. The first two instruments must vary with the sense-stimulus to be produced and the motion to be registered; to measure the times, I have used the Electric Chronoscope made by Hipp in Neuchatel. When properly controlled, this chronoscope measures the time as accurately as any of the chronographic methods which have been proposed, and it is much simpler and more convenient in its application.

The Chronoscope is a clockwork moved by a weight and regulated by a vibrating spring. The spring vibrates a thousand times a second, and at each vibration the tooth of a wheel is allowed to pass, somewhat on the principle of the escapement in a watch. This method of regulating the clockwork is ingenious and accurate, but, especially in the new form of the chronoscope, is apt to get out of order. The value of the chronoscope consists in the application of an electromagnet. The hands recording the time are not in connexion with the clockwork, and consequently do not move when it is set in motion; but, when an electric current is sent through the coil of the electromagnet, the armature is attracted, a system of levers throws the hands into connexion with the clockwork and they are set in motion; and, again, when the current flowing through the coil is broken, a spring draws back the armature and the hands stand still. Thus the time the current flowed through the coil of the electromagnet is measured.[1] The hands record thousandths of a second.[2] The chronoscope works with great accuracy; the only serious difficulty in its application being that the length of the times recorded by the hands varies with the strength of the current passing through the coil of the magnet. Supposing the strength of the spring holding back the armature to remain constant, if the current sent through the coil is very weak, the soft iron is only completely magnetised after a considerable interval, and it takes longer for the magnet to attract the armature after the current has been closed, than for the spring

[1] A second electromagnet makes it possible to reverse this process, and measure the time a current has been broken.

[2] Throughout this paper, both in the text and in the tables ·001 second is taken as the unit of time. I use σ as a symbol to represent this unit: σ is analogous to $\mu = ·001$ mm.

to draw back the armature after the current has been broken; consequently the time recorded by the hands is shorter than the time the current flowed through the coil of the magnet. If, on the other hand, the current used is very strong, the soft iron is rapidly magnetised and the armature attracted. But the magnetism lasts a considerable interval after the current has been broken. Thus, it takes longer for the spring to draw back the armature after the current has been broken than it took the magnet to attract it after the current had been closed, and the time recorded by the hands is longer than the time the current flowed through the coil of the magnet. If the strength of the current is not properly adjusted, the times recorded may be over $\frac{1}{10}$ sec. too long or too short, an error as large as the whole length of the reaction-time. It is, however, possible so to adjust the relation between the strength of the spring and the strength of the current that it takes exactly as long for the magnet to attract the armature after the current has been closed as it takes the spring to draw it back after the current has been broken, and in this case the hands record the exact time the current flowed through the coil of the magnet. This can be done empirically by determining the time the current has been closed, and then so adjusting the strength of the spring and the current that the hands record the correct time. For this purpose (as well as for others later to be described) I have used an instrument, which, with reference to theuse for which it was first devised,[1] I call a Gravity-Chronometer.

It consists (Fig. 1) of two heavy brass columns 30 cm. high and 10 cm. apart, standing perpendicular to the base. The columns can be set exactly perpendicular by means of the three screws on which the apparatus stands. Wedge-shaped grooves are worked in the columns, and in these a heavy soft iron screen slides without appreciable friction. This screen is held up by an electromagnet, which can be adjusted at any height desired. When the current passing through the coil of the magnet is broken, the screen falls, falling through the same distance in an exactly constant time. On one of the columns small keys (Figs. 2 and 3) can be fastened, which respectively close and break a current. They each consist of a hard rubber basin filled with mercury, the mercury being in connexion with a binding screw; a lever with a platinum point, connected by a wire with a binding screw, dips into the mercury. In the one key (Fig. 2) the lever is so adjusted that the point does not touch the mercury, but when the key is fastened to the column of the gravity-chronometer and the lever is struck by the falling screen, the point is thrown into the mercury. In the other key (Fig. 3.) the lever dips into the mercury, but is thrown out (as shown in the figure) when struck by the screen. The keys are fastened to one of the columns, as at x and y (Fig. 1), the key (Fig. 2) at which the current is interrupted being above. The current controlling the chronoscope passes through both of these keys, the connexion, however, being interrupted at the upper key. The screen is now allowed to fall by breaking a current (not the chronoscope current) which through the electromagnet had been holding it up. After the screen has attained a considerable velocity it strikes the lever of the upper key, and throws it into the mercury; thus the current controlling the chronoscope is closed and the hands are set in motion. After the screen

[1] See *Philosophische Studien*, iii. 1; *Brain*, Oct., 1885. The apparatus described in this paper was made under my direction in the workshop of Carl Krille, Leipsic, and he can supply duplicates. The apparatus can be examined in the Psychological Laboratory, Leipsic, or in the Army Medical Museum, Washington.

has fallen the distance between the keys (*xy*) it strikes the lever of the second key and throws it out of the mercury; the current controlling the chronoscope is consequently broken and the hands stand still. The screen always falls through the distance between the keys in exactly the same time, and the times recorded by the hands of the chronoscope are constant,

FIG. 1.

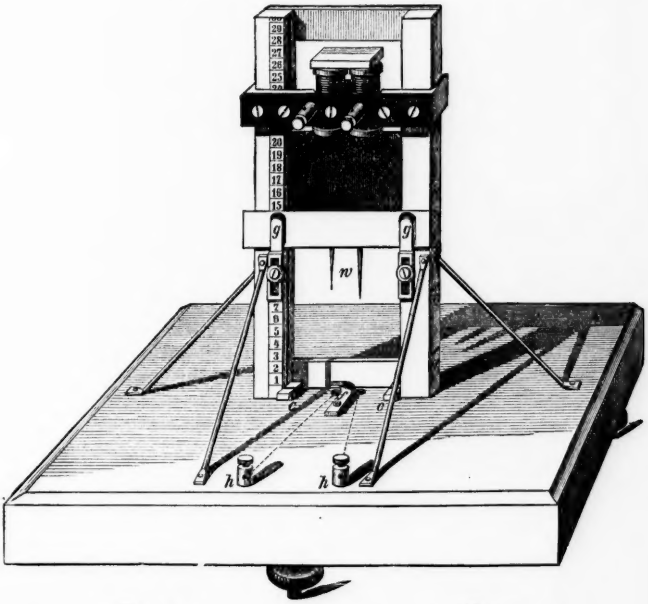


FIG. 2.

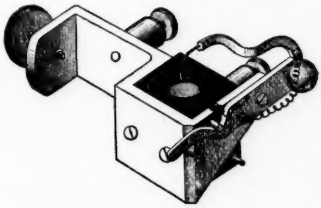
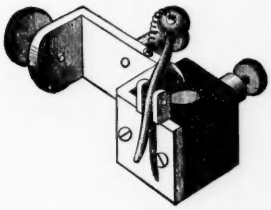


FIG. 3.



but may be over $\frac{1}{10}$ sec. longer or shorter than the time the current was really closed. The time required for the screen to fall through the distance *xy* (the time the current has been closed) is determined by means of a tuning-fork which writes on smoked paper covering the screen. The time can also be calculated; the theoretical time for a body falling in a vacuum

being but little shorter than the actual time as determined by the tuning-fork. When we know the time between the closing of the current at the upper key, and the breaking at the lower, the strength of the current attracting the armature and of the spring holding it back can be so adjusted that the hands record the correct time. The stronger the current and spring are taken, the shorter is the time required for the armature to be attracted after the current has been closed and drawn back after the current has been broken. The determination with the tuning-fork need only be repeated so often that we are sure no error has been made; it is well to change the distance between the keys and see that the times given by the chronoscope and the tuning-fork are the same. The chronoscope must, moreover, be controlled every day by the gravity-chronometer (or by a sensitive electrometer; the apparatus itself is a very sensitive electrometer) to see that the current has remained constant, and to readjust it if it has become stronger or weaker. For this purpose the gravity-apparatus supplied by Hipp can be used if proper precautions are taken. The strength of the current is adjusted by means of a rheostat, (R, R', Fig. 8) and its direction changed (to avoid permanent magnetism) by means of a commutator. It is evident that a battery must be used giving as constant a current as possible. After considerable experiment I have adopted a form of the zinc-copper gravity-battery. I use six large cells, renewing them about once a month.

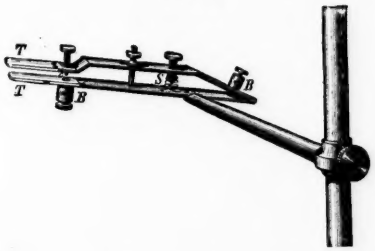
If the chronoscope is properly controlled it measures the times very accurately. With the same current the mean variation of the chronoscope (including sources of error in the gravity-chronometer) is less than $\frac{1}{1000}$ sec. This small variation corrects itself completely in a series of measurements. A second variation about equal to the first is caused by the current not being accurately adjusted, or changing after it has been so adjusted. This error also tends to eliminate itself. A third source of error lies in the chronoscope's running too fast or too slow. This is, however, no greater than in any chronographic method where the time is measured by a vibrating tuning-fork; the chronoscope can indeed be regulated with great accuracy as it runs a minute (60,000 vibrations).

The gravity-chronometer (Fig. 1) was used in nearly all my experiments to produce the sense-stimulus, and to close at the same instant the current controlling the chronoscope. When the reaction-time for light was to be determined, the space between the columns was filled up with black pasteboard, so that the screen was completely hid from the observer. In the pasteboard (below the screen, the magnet being higher than in the figure) a hole 3×2 cm. was cut, and the observer fixated a black surface several mm. back of the hole. The experimenter allowed the white screen to fall by breaking the current which had been flowing through the coil of the magnet. Suddenly and without warning, at the point fixated by the observer a white surface 3×2 cm. appeared; at the same instant (to $\frac{1}{1000}$ sec.) the screen struck the lever of the key (Fig. 2) and closed the current controlling the chronoscope. No noise is made by the falling screen until it is stopped by striking the spring f and the rubber cushions c c, and this noise comes too long after the light to either shorten or lengthen the time of the reaction. The spring f is so adjusted as to partially stop the falling screen and to prevent it from rebounding after it has struck the cushions. If cerebral operations other than those included in the reaction-time were to be investigated, the object exciting these operations, a printed word for example, was pasted on a card 15×3 cm. This card is held in position by the springs g g, and is hid from the observer by the black screen. The observer fixated a grey spot on the screen, which exactly covered the object on the card (the figure shows of course the back of the apparatus). A bent

copper wire *w*, one side longer than the other, is fastened to the screen, as shown in the figure. When the screen falls the amalgamated points run into two holes bored in the base and filled with mercury. These basins are connected with the binding screws *h h*, and these respectively with the battery and chronoscope, so that the current is interrupted at this point. When the screen falls, however, the copper wire connects the two basins of mercury, and the apparatus is so adjusted that the instant (to $\frac{1}{1000}$ sec.) the object on the card is uncovered to the observer, the shorter limb of the wire touches the mercury and the current controlling the chronoscope is closed. This method is in every way better than that hitherto used of illumining the object by an electric light. It avoids altogether the great inconvenience and difficulty of using an induced current, as keeping the light constant, closing simultaneously an induced and galvanic current and other difficulties best known to those who have tried to overcome them. Further, it eliminates the time required to adapt the eye to a light of unexpected intensity, placed by experimenters as quite large. Lastly, it enables the observer to fixate exactly the point at which the object appears, so that words, &c., can be used.

Three instruments were used to break the current controlling the chronoscope at the instant the observer made a motion. The first of these was a telegraphic key, which the observer held closed with his finger or fingers, and let go by a motion of the hand. The key used should be very sensitive ; it should break the current instantaneously, yet should not require much pressure to hold it closed. The other two instruments were devised to break the current when the organs of speech are moved. The first of these (Fig. 4) we can call a lip-key. The binding screws

FIG. 4.



B B are connected respectively with the battery and the chronoscope. The platinum contact at *c* is closed when the observer holds the ivory tips *T T* between his lips ; but as soon as the lips are moved the spring *S* breaks the contact, and, consequently, the current which had been flowing through the chronoscope. The only difficulty in the way of using this lip-key is that it is possible for the observer to move his lips before he makes the motion to be registered. This difficulty is avoided by means of the apparatus shown in Figures 5, 6 and 7, which we can call a sound-key. The current controlling the chronoscope is broken when the observer speaks into the mouth-piece *M* (Fig. 5). An additional galvanic current is needed to work this apparatus. I used four Daniel cells. The current flowed through a commutator (*C''*, Fig. 8), the coil of the electromagnet (Fig. 7), and the instrument shown in Figures 5 and 6. This latter consists of a mouth-piece, a funnel, and a ring (Fig. 6) fitting into the

funnel, and covered with kid leather. When the observer speaks into the mouth-piece, the sound waves through the membrane into vibration, and the platinum contact at *c* is broken; the breath accompanying speech also breaks the contact. The current making the electromagnet (Fig. 7)

FIG. 5.

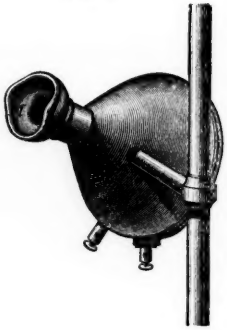


FIG. 6.

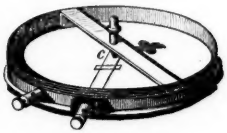
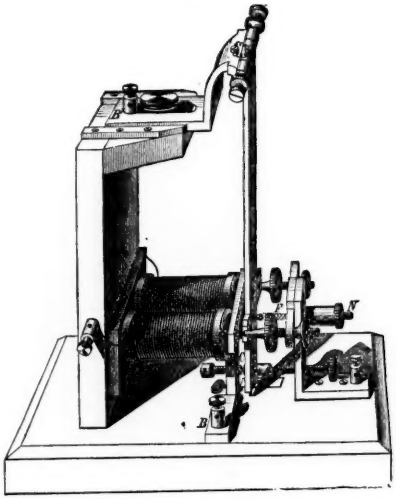


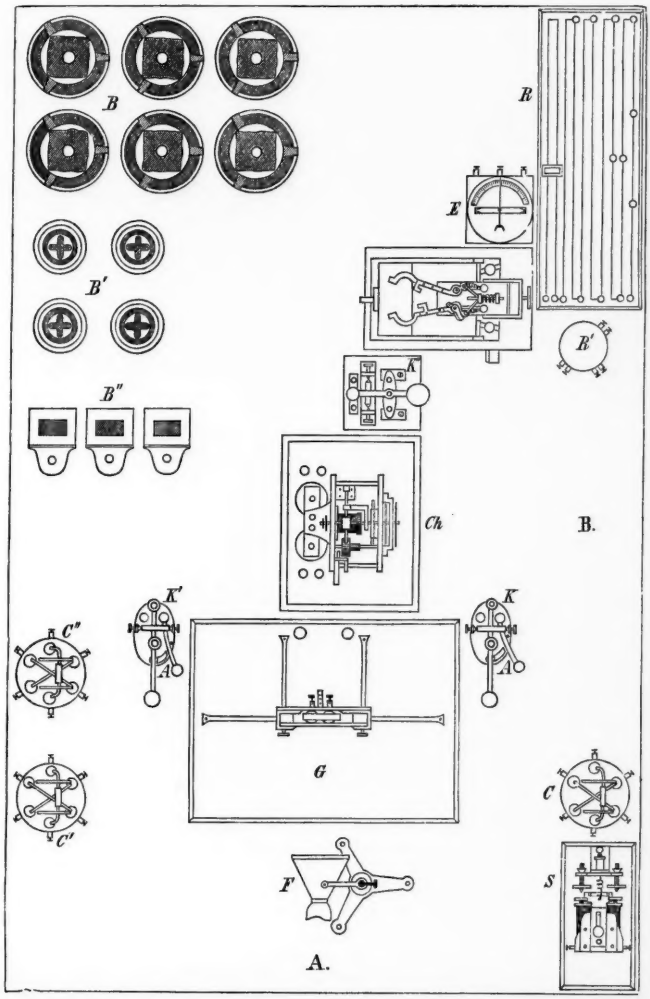
FIG. 7.



flows through this contact; so when it is broken, if only for an instant, the soft iron looses its magnetism, and the armature is drawn back by means of the spring *F*. The strength of this spring can be regulated by means of the screw *N*. The binding screws *B B'* are connected respectively with

the chronoscope and its battery, so that the current flows through the contact at *C*. This contact is closed as long as the armature is held by the magnet, but is broken the instant the magnetism in the soft iron disappears or is weakened so that the spring can draw away the armature. The armature is not held against the magnet, the contact being at the point *C*.

FIG. 8.



The pressure is kept constant by regulating the strength of the spring *F*. It will be seen that after the contact in the funnel is broken, no appreciable time elapses before the current controlling the chronoscope is broken; but the contact in the funnel is broken by the slightest motion of the speech-organs, so the instant of this motion is registered.

In Fig. 8 I give the arrangement of the apparatus when it is wished to determine, for example, the time it takes to see and name a word. It is a matter of no small importance so to arrange the apparatus that it can be conveniently operated on, and the figure will further make clear the connexion of the different instruments and the several batteries. The observer sits at A., the light coming over his left shoulder. His head is held naturally, and at the distance of most distinct vision for the word. He can conveniently speak into the mouth-piece of the sound-key *F*, or hold the telegraphic key at *K* closed. The experimenter[1] sits at B., within easy reach of all the apparatus he has to control. The current belonging to the chronoscope flows from the positive pole of the battery *B* to the commutator *C*, thence through the rheostat *R R'* (if desired, also through the electrometer *E*) and chronoscope *Ch* to the gravity-chronometer *G*, where the connexion is interrupted when the mercury in the two basins is not connected, thence the current flows through the contact of the sound-key at *F* back to the commutator and battery. The current making the electromagnet of the gravity-chronometer flows from the battery *B'* to the commutator *C'*, and thence through the key *K''* and the gravity-chronometer back to the commutator and battery. The third current, controlling the sound-key, flows from the battery *B''* to the commutator *C''*, and thence through the contact of the sound-key at *F* and coil of the magnet at *S*, and back to the commutator and battery. Suppose now we wish to measure the time it takes to see and name a word. The experimenter puts a card on which a word is printed into the springs of the gravity-chronometer; he then says 'now,' and starts the clockwork of the chronoscope. The observer fixates the point on the screen immediately before the word. Then the experimenter (or the observer himself) allows the screen to fall by breaking the current which, through the electromagnet, had been holding it up. Suddenly the word appears at the point fixated by the observer, and at the same instant the basins of mercury are connected by the copper wire; thus the current controlling the chronoscope is closed and the hands are set in motion. The observer names the word as quickly as possible. As soon as he begins to speak, the current making the magnet at *S* is broken and the armature is drawn away. The current controlling the chronoscope is thus broken, and the hands stand still. The experimenter then stops the clockwork and reads from the dials the exact time taken to see and name the word.

The special methods and precautions necessary to secure correct results in using the apparatus here described can best be considered when I come to treat of the different cerebral operations, the times of which I have tried to determine. It may, however, be well to mention here two points, which are common to all the experiments I have made. The first of these is the method of deducing a correct average from the separate experiments. Two methods have been employed: either all the re-

[1] I call the person having charge of the apparatus the experimenter; the person on whom the experiments were made the observer.

actions measured have been averaged together, or those times which the experimenter thought too long or too short have been altogether ignored. There are however serious objections to both of these methods. The former does not give correct results. Through some abnormal circumstance, a reaction may vary so greatly from the average of the others, that the whole series gets a false value. It might be supposed that this error could be eliminated by making the whole number of experiments sufficiently large; this, however, makes necessary a great expenditure of time and labour, without altogether correcting the error. In physical experiments, the measurements varying most from the average are equally likely to be positive or negative; this is not the case in our work. Reactions that are so short as seriously to affect the average can scarcely occur, but through some inner or outer disturbance the reactions are sometimes abnormally long. Thus, even though the average of an indefinitely large number of reactions is taken, the result is not correct, but somewhat larger than the average of the reactions made under normal circumstances. The method introduced by Exner of simply ignoring the reactions which seem to be too long or too short may give correct results, but is undoubtedly unreliable. The experimenter thinks he has found the proper worth, and then almost unconsciously leaves out of his reckoning the reactions which would invalidate it. For example, Merkel[1] gives fifteen averages in which his 'perception time' is between 22 and 25σ, and the times in a hundred and twenty other series, made on eight different persons, correspond exactly with this, varying only between 19 and 26σ. These averages correspond to an altogether impossible extent; we need not therefore be surprised at finding the time quite false. The work of v. Kries and Auerbach[2] loses much of its value from the fact that so many of the determinations have been omitted in calculating the results.

I have used a different and, as far as I am aware, new method. If the apparatus did not work properly, of course no reaction was measured; but the average of all the reactions measured was calculated. Either 13 or 26 reactions were made in a series; the average of these reactions was calculated, and the variation of each reaction from this average. Then the reaction having the largest variation was dropped, the average of the remaining 12 or 25 reactions was calculated, and the reaction varying most from this average was again dropped. This process was continued until the 3 or 6 worst reactions had been dropped, I then having the 10 or 20 best reactions, and the variation of each of these from the average. In practice we need not calculate so many new averages, it being only necessary to drop the 3 or 6 reactions

[1] *Philosophische Studien*, ii. 1.

[2] *Du Bois-Reymond's Archiv*, 1877.

varying most from the corrected average, which can usually be foreseen. In this paper I give the average of all the reactions made, as well as the average corrected by the method I have described. It will be seen that the two values do not differ greatly; this is owing to the fact that the conditions of the experiments were such that really abnormal reactions seldom occurred.

The second point to be mentioned here is the influence of practice, attention and fatigue on the length of the times determined. In a later section of this paper I shall give an account of experiments I have made on this subject. In other cases it was sought to eliminate as far as possible these sources of variation. The two subjects (Dr. G. O. Berger and the writer) on whom the determinations were made had already had much practice in psychological work. They were in good health and lived regularly, not even using coffee. The experiments were made every morning (except Sunday) from eight to one o'clock. After each series of 26 reactions, a considerable and constant interval elapsed before the same subject again reacted. The subject held his attention as constant as possible, and was not disturbed by noise or the presence of others in the room.

These experiments, though begun in America, have been carried out in the psychological laboratory of the University of Leipsic. Professor Wundt, the founder and director of this laboratory, has earned the gratitude of all those interested in the scientific study of the mind. I owe him special thanks for the constant help and encouragement he has given me in my work.

II. *The Reaction-Time.*

The reaction-time can be determined with ease and accuracy, but it is difficult to decide what operations take place when a reaction is made, quite impossible to determine how the time is divided among the several operations. We shall see that under favourable circumstances the reaction-time for light is about 150σ. It seems to me probable that this period is divided about equally between the processes occurring within and without the brain. The latter are: (1) the latent period in the sense-organ; (2) the time of transmission in the afferent nerve; (3) the time of transmission in the spinal cord and efferent nerve; and (4) the latent period in the muscle. Physiologists have attempted to determine these times separately, but they must be far more constant than the discordant results would lead us to suppose. The experiments I am about to describe show that when the reaction-time is measured the mean variation of the separate times from the average is only $\frac{1}{20}$ of the whole time; and we may attribute this small variation chiefly to changing states of the brain. If these times were not constant it is probable that we could not distinguish colours and tones.

The velocity at which a nervous impulse is transmitted has

been a favourite subject for physiological research,[1] but the results as yet reached are unsatisfactory. Exner, in Vol. ii. of Hermann's *Handbuch der Physiologie*[2] gives, as result of the "perfectly irreproachable measurements" of Helmholtz and Baxt, the rate of transmission in a motor nerve as 62m. the second; whereas, in the same volume[3] and likewise as the result of experiments by Helmholtz and Baxt, Hermann gives the rate as 33·9005m. the second. The fact seems to be that the rate depends on the temperature and other conditions, chiefly brought about by the method of experiment. Determinations made on the sensory nerve give results still more discordant and unsatisfactory. We can for the present do nothing better than assume the average rate of transmission in both motor and sensory nerve to be 33m. the second. It is probable that the rate is slower in the spinal cord, and that the nervous impulse is delayed in entering and leaving the cord, as also in passing through a ganglion.[4] As a temporary hypothesis we can suppose that when the reaction, lasting 150σ, is made, 50σ is used in transmitting the nervous impulse from the retina to the brain, and from the brain through the spinal cord to the muscle of the hand. The latent period when the muscle of the frog is stimulated by means of an induction-shock, is between 5 and 10σ;[5] and is perhaps the same when the muscle of the hand is innervated by means of a will-impulse. There is also undoubtedly a latent period in the sense-organ while the stimulus is being converted into a nervous impulse. In the so-called mechanical senses this period is very short, but when the retina is stimulated by light a chemical process (as we suppose) takes place, and the time may be quite long.[6] We know that a light must work on the retina for a considerable time in order that the maximum intensity of the sensation may be called forth; from this time, however, we can draw no exact inferences as to the length of the process here under consideration. I have shown[7] that a coloured light of medium intensity must work on the retina ·6 to $2{\cdot}75\sigma$ (varying with the observer and colour) in order that a sensation may be excited; the time becomes however much longer when a white light follows the

[1] See for references Hermann, *Handb. d. Physiol.* II., ii., 14 ff.

[2] ii., 272.

[3] i., 22.

[4] Exner, *Pflüger's Archiv*, viii., *Archiv. f. Anat. u. Phys.*, 1877; François-Franck et Pitres, *Gazette Hebd.*, 1878; Wundt, *Mechanik der Nerven*, ii., 45.

[5] Tigerstedt, *Archiv f. Anat. u. Physiol.*, 1885, and references there given.

[6] V. Wittich (*Zeitschr. f. Rat. Med.*, xxxi.) and Exner (*Pflüger's Archiv*, vii.) found the reaction-time to be shorter when the optic nerve was stimulated by an electric current than when the retina was stimulated by light. This difference may, however, be due to other factors of the reaction-time as well as to the latent period in the sense-organ.

[7] *Philosophische Studien*, iii., 1; *Brain*, Pt. 31.

colour, the second light washing away, as it seems, the impression made on the retina by the first light. Under these circumstances a violet light had to work on the retina $12{\cdot}5\sigma$, if it were to be distinguished. It seems, therefore, probable that the violet light had not been converted into a nervous impulse within this interval, and if this is the case it would give us a minimum time for this process. The familiar experiment with rotating discs shows that light-impressions of moderate intensity following one another at intervals of 25σ are just fused together. It seems, therefore, that the retina is excited, and begins to resume its normal condition in about 25σ. If this assumption is correct we have the maximum time for the period under consideration. We may be tolerably sure that the time passing before a light is converted into a nervous impulse varies with the intensity of the light, and may perhaps assume the time to be 15-20σ for daylight reflected from a white surface.

These considerations lead us to suppose that, when a reaction is made on light, only about half the time, that is 75σ, is taken up by the cerebral operations. We naturally ask what happens in the brain after the nervous impulse reaches it. It has generally been assumed that the largest factors of the reaction-time are taken up by the processes of perception and willing. I think however that if these processes are present at all they are very rudimentary. Perception and volition are due, we may assume, to changes in the cortex of the cerebrum, but reflex motions in answer to sense-stimuli, as in contraction of the pupil and in winking, can be made after the cortex has been removed, and an animal in this condition can carry out motions adapted to the nature of the stimulus. If a pigeon from which the cerebral hemispheres have been removed is thrown into the air, it will not only fly, but also avoid obstacles and alight naturally on the ground. It seems to have consequently sensations of light, but apparently no perceptions, either because it does not see colour and form, or because it lacks the intelligence needed to understand their meaning. In the same way a reaction such as we are considering can probably be made without need of the cortex, that is, without perception or willing. When a subject has had no practice in making reactions (in which case the reaction-time is usually longer than 150σ) I think the will-time precedes the occurrence of the stimulus. That is, the subject by a voluntary effort, the time taken up by which could be determined, puts the lines of communication between the centre for simple light sensations (in the optic thalami probably), and the centre for the co-ordination of motions (in the corpora striata, perhaps, connected with the cerebellum), as well as the latter centre, in a state of unstable equilibrium. When therefore a nervous impulse reaches the thalami, it causes brain-changes in two directions; an impulse moves along to the cortex, and calls forth there a perception corresponding to the stimulus, while at the same time an

impulse follows a line of small resistance to the centre for the coordination of motions, and the proper nervous impulse, already prepared and waiting for the signal, is sent from the centre to the muscle of the hand. When the reaction has often been made the entire cerebral process becomes automatic, the impulse of itself takes the well-travelled way to the motor centre, and releases the motor impulse.[1]

I now go on to give the results of my experiments. I only give the determinations made on B (Dr. G. O. Berger) and C (the writer); I have made similar determinations on other subjects of different age, sex, occupation, etc., but these can be better considered after we know the results of careful and thorough experiments on practised observers. We have first to consider the simple reaction-time for light. When this was to be measured, all being in readiness, as described in the foregoing section, the experimenter said 'Jetzt,' and the observer fixated the point at which the light was to appear, and put himself in readiness to make the reaction. The experimenter then set the clock-work of the chronoscope in motion, and about one second afterwards caused the light to appear by means of the apparatus described. The observer lifted his hand as soon as possible after the appearance of the light, and the interval that had elapsed between the occurrence of the light and the commencement of the muscular contraction was read by the experimenter directly from the chronoscope. In no single case, as far as I can remember, did the observer make a premature reaction, that is, lift his hand before the necessary physiological operations had had time to occur. The only disturbance was caused by the clock-work of the chronoscope sometimes not being properly controlled by the vibrating spring. If the experimenter noticed this in time he did not produce the light. This occasional failure of the chronoscope was always noticed, so does not interefere with the accuracy of the times here given, but the observer was sometimes disturbed so that his reactions may have been made less regular. Throughout this paper I give every series and every reaction made; I give, however, in addition to each series, a corrected value reached by the method above described. This correction simply excludes all abnormal values. In the Tables I give the average of the variation of each reaction from the average of the series to which it belongs (V); that is, if A is the average of the n reactions

[1] This theory concerning the nature of the reaction would be none the less probable, though we suppose the centres for sensation and perception not to be distinct, or indeed that in the reaction the brain, in some mysterious way, 'acts as a whole'. In this paper I take it for granted throughout that mental states are due to changes in the brain. We know, however, but little as to the functions of the brain. I therefore make as few assumptions as possible, and these must be kept apart from the positive results, which it is the object of this paper to make known.

making up the series, and a_1, a_2, a_3, . . a_n are the values of the several reactions, then

$$V = \frac{(A - a_1) + (A - a_2) + (A - a_3) + \ldots + (A - a_n)}{n}$$

all the differences being taken as positive. The averages under R in the Tables (except when expressly stated) are taken from the 26 observations which made up the series, the averages under R′ from the 20 reactions of the corrected series. Table I. gives the results of twenty series, made at intervals during a period of six months.

TABLE I.

1885.	B				C			
	R	V	R′	V′	R	V	R′	V′
12. I.	140	10	141	8	144	12	143	8
	145	10	143	6	136	9	138	5
16.....	137	16	139	11	133	16	128	11
	156	10	155	7	147	15	150	11
30.....	131	13	131	9	149	9	151	6
	152	13	149	9	143	11	143	9
27. II.	148	14	147	8	146	10	144	7
	160	13	162	8	144	9	144	6
28.....	139	13	142	11	149	9	149	6
	161	15	163	9	146	9	146	5
	152	13	149	7	144	9	143	6
31. III.....	164	14	164	8	163	9	163	6
	151	10	153	6	150	8	151	5
3. IV.	133	16	132	11	143	8	144	5
	157	9	159	6	138	11	136	7
4.	165	13	170	9	161	9	163	5
5.	144	13	147	9	147	9	148	6
7.	168	9	170	5	148	17	148	9
2. VII.....	137	16	140	11	158	12	158	6
4.	152	13	155	9	140	14	145	9
A.....	150	13	151	8	146	11	147	7

The Table shows that the average of 520 reactions on daylight reflected from a white surface was, for B 150, for C 146σ; or, if the series are corrected by the method explained, the averages for both B and C become 1σ longer. The average of the mean-variation of the reactions from the series to which they belong was for B 13, for C 11σ; in the corrected series it becomes respectively 8 and 7σ. It will be seen from the Table that the series made at different times do not differ greatly from each other; the mean-variation of the twenty series is B 9, C 5. The reaction-time for practised observers is consequently quite a constant quantity; when a reaction is made it will only differ

about $\frac{1}{100}$s. from those preceding and following it, and less than $\frac{2}{100}$s. from reactions made on different days and under changed circumstances. I do not however lay much weight on the third decimal; if this investigation were to be repeated it is not likely that we should obtain the same results to $\frac{1}{1000}$s. When B's reaction-time for light is given as 150σ, I only mean that this was the result of these 520 reactions; in comparing this with other determinations where we wish to know the absolute length of B's reaction-time, we can best limit ourselves to saying that it is ·15s., or perhaps better still, between ·14 and ·16s.

In these experiments the reaction was made with the right hand. The time is the same with the left hand.[1] I give in Table II. the average of five series (130 reactions) made with the left hand on light and also on sound.[2]

TABLE II.

		B				C			
		R	V	R′	V′	R	V	R′	V′
Light....	3-7. IV.....	153	12	156	8	147	11	148	6
Sound...	3-7. IV.....	126	8	126	6	122	11	122	7

It is a matter which the later sections of this paper will show to be of special interest to us that the time is longer when the reaction is made with the speech-organs. To determine this time I used both the lip-key and the sound-key above described. In either case the observer said 'Jetzt' as soon as possible after the appearance of the light, and the motion of the speech-organs stopped the hands of the chronoscope in the way I have explained. The results of these experiments are given in Table III.

We thus find that it takes about 30σ longer to make the reaction with the speech-organs than with the hand.

I used an additional method of determining the reaction-time with the speech-organs. The observer as quickly as possible after the appearance of the light simply said 'Jetzt'; a second observer as soon as he heard the sound let go the telegraph-key, and this stopped the hands of the chronoscope. The hands recorded the time of a double reaction, that of the first observer on the light with his speech-organs, and that of the second observer on the sound with his hand. But we can determine

[1] Tischer, *Phil. Studien*, i., 534; Merkel, *Ib.*, ii., 88. Prof. G. S. Hall and Dr. Hartwell (MIND, ix. 93) do not seem to have known of the work published by Tischer and Merkel.

[2] The sound (as in all cases where the reaction-time for sound was measured) was made by a stone ball 22 gr. in weight, falling from a height of 33 cm. on the wooden base of the Hipp gravity-apparatus.

TABLE III.[1]

	SOUND-KEY.				LIP-KEY.			
	B		C		B		C	
	R	R′	R	R′	R	R′	R	R′
3. IV.	164	167	177	176	199	199	172	171
	161	159	165	165	185	187	173	173
5.	175	176	175	176	199	201	172	173
	170	168	175	172	189	186	177	177
7.	168	168	157	159	166	165	185	176
A.	168	168	170	170	188	188	176	174
AV.	19	10	16	10	11	6	13	8

the time of the second observer's reaction on the sound, and by subtracting this from the entire time, we have the reaction-time of the first observer with his speech-organs. When the average of several series is taken the error becomes very small. A further application of this method will be found below. For our present purposes it was to a large extent superseded by the use of the lip-key and sound-key. There are however certain difficulties in the way of using these instruments, especially in the case of inexperienced persons, children or the insane, for example. The method could further be applied to determining the reaction-time, etc., of the lower animals, and also the length of certain reflex processes where the motion can with difficulty be registered. I give in Table IV. the results of four series of reactions made in this way, Mr. H. Wolfe making reactions on the sound.

TABLE IV.

	B				C			
	R	V	R′	V′	R	V	R′	V′
7. 1	349	30	346	20	328	32	321	17
	330	37	332	23	327	24	326	14
30.	380	30	372	20	392	27	392	18
	357	32	349	19	393	25	393	16
A.	354	32	350	20	360	27	358	16

Mr. Wolfe's reaction-time on sound was about 150σ. The series made on 30 I. seem to have given rather long times, the

[1] To save space in this and some other Tables, I only give the average of the mean-variation for the several series (AV).

others correspond to those where the motion of the speech-organs was directly registered.

The length of the reaction-time depends on conditions which can be classified as belonging, partly to the sense-stimulus, partly to the reacting subject. It was my object in the experiments here under consideration rather to eliminate these sources of variation than to investigate them. I used therefore the same sense-stimuli and the same subjects. The only varying conditions were the changing states of the subject due chiefly to different degrees of attention, fatigue and practice. It seemed desirable thoroughly to investigate these owing (1) to the light they throw on the nature of the cerebral operation, and (2) to the necessity of knowing what influence they exert on the lengths of the processes investigated, before we can judge of the accuracy of our results. I can best postpone the full consideration of this subject until the end of the paper, but it will be of advantage before going further to consider the relation of attention to the length of the reaction-time. It has always been assumed that the length of the reaction varies greatly with different degrees of attention, and this is a natural supposition, when it is believed that the time is mostly taken up by the processes of perceiving and willing. If however the reaction is automatic, the changes not penetrating into the cortex of the cerebrum, then the time would not be greatly dependent on the concentration of the attention during the reaction. The reaction would however be delayed if the conditions were such as to make it difficult for the subject to hold the path of communication and motor centre in a state of readiness. The simplest way of distracting the attention is to cause a noise while the reactions are being made. I let three metronomes beat and ring rapidly. The results of these experiments are given in Table V. for both light and sound.

TABLE V.

	LIGHT.				SOUND.			
	B		C		B		C	
	R	R′	R	R′	R	R′	R	R′
2. IV.	149	150	162	159	122	120	121	118
3.	159	159	146	147	124	127	120	119
	152	152	144	142	126	124	128	127
4.	146	148	162	161	132	131	137	138
5.	155	155	168	170	119	119	125	124
A.	152	153	156	156	125	124	126	125
AV.	8	5	10	6	10	6	10	6

If these results are compared with those given in Table I. it will be seen that B's reaction-time for light was lengthened 2, C's 10σ. These increments are very small, falling in the case of B within the limits of the natural variation. The reaction time for sound was the same as when no distracting noise was present. Wundt[1] found the reaction-time to be considerably lengthened by a distracting noise. This was probably because the subjects had not learned to make the reaction as automatically as B and C. The experiments by Obersteiner[2] are scarcely such as to give accurate results.

The attention can be more thoroughly distracted if the brain is busied with some other operation while the reactions are being made. A good way to accomplish this is to let the subject beginning with any number add as rapidly as possible 17 after 17 to it. The attention can on the other hand be concentrated to a maximum degree by a voluntary effort of the subject. Many experimenters seem to have attempted this in all their reactions; Exner, for example, says[3] that although sitting quietly on his seat he would sweat with the exertion. In my experiments the attention was held in a state which I shall describe as normal; the subject expected the stimulus and reacted at once, but did not strain his attention or make special haste. We have thus three grades of attention: concentrated, normal and distracted.

TABLE VI.

CONCENTRATED.				NORMAL.				DISTRACTED.			
R	V	R′	V′	R	V	R′	V′	R	V	R′	V′
12.—25. II. 1884. B LIGHT.											
189	15	187	8	201	17	197	9	245	28	242	13
C											
158	17	156	10	132	16	133	9	153	19	151	10
27. II.—6. III. 1884. B ELECTRIC SHOCK.											
160	13	161	7	165	12	164	7	190	16	189	9
C											
147	14	147	8	150	15	150	9	184	21	184	11

[1] *Physiol. Psych.*, ii., 243.

[2] *Brain*, 1879.

[3] Herman's *Handb. d. Physiol.*, II., ii., 287.

The first experiments on this subject were made in the winter of 1883-4, before the chronoscope was properly controlled; the absolute times may be as much as 10σ wrong, but the relative times are correct. As a stimulus I used the electric light produced in a Puluj's tube, and an induction-shock of moderate intensity on the left forearm. In these experiments 15 reactions were

TABLE VII.

	CONCENTRATED.				NORMAL.				DISTRACTED.			
	R	V	R′	V′	R	V	R′	V′	R	V	R′	V′
	B LIGHT.											
27. II.	144	16	147	7	148	14	147	8	196	26	185	12
	131	11	130	8	160	13	162	8	186	26	183	19
28.	141	10	143	7	139	13	142	11	178	15	180	11
	137	8	139	4	161	15	163	9	179	16	179	10
	143	8	144	6	152	13	149	7	194	14	190	9
A.	139	11	141	6	152	14	153	9	187	19	183	12
	C											
27. II.	149	13	150	9	146	10	144	7	166	12	167	7
	149	7	150	4	144	9	144	6	154	16	156	11
28.	146	8	144	5	149	9	149	6	157	13	159	8
	146	12	144	8	146	9	146	5	154	9	155	6
	140	8	139	5	144	9	143	6	163	14	160	9
A.	146	10	145	6	146	9	145	6	159	13	159	8
	B SOUND.											
2. II.	132	7	132	5	157	11	157	8	193	26	189	13
	129	6	129	5	158	19	149	8	188	28	191	19
3.	127	14	129	4	155	14	152	7	174	12	173	8
	123	9	122	6	147	10	145	6	169	24	163	17
4.	127	7	126	5	138	9	139	6	188	24	183	17
A.	128	9	128	5	151	12	148	7	182	23	180	15
	C											
2. II.	129	12	126	8	145	10	140	6	166	18	162	12
	135	11	135	8	133	12	132	9	156	19	148	14
3.	125	12	127	6	141	11	140	8	158	15	161	9
	123	12	123	8	142	11	139	6	155	17	155	12
4.	131	11	126	8	136	10	133	5	157	15	153	9
A.	129	11	128	8	139	11	137	7	159	17	156	11

made in a series, 5 being dropped in the corrected series. The numbers in Table VI. give the average from 10 series.

Similar experiments were made in 1885, daylight and sound being used as stimuli. The averages given in Table VII. are as usual taken from 26 reactions.

I put together the results of these experiments in Table VIII., the time when the attention was normal being taken as 0.

TABLE VIII.

	B		C	
	Concen.	Distr.	Concen.	Distr.
Electric light	— 12	+ 44	+ 26	+ 21
„ shock	— 5	+ 25	— 3	+ 34
Daylight	— 13	+ 35	0	+ 13
Sound	— 23	+ 31	— 10	+ 20
A.	— 13	+ 34	+ 3	+ 22

It will be noticed that when the brain is otherwise occupied the reaction is lengthened, though not to a great extent. The time is however but little shorter when the subject makes a great exertion to react quickly than when he makes the reaction easily and naturally. These experiments support the hypothesis that a reaction is an automatic act, only needing the activities seated in the cortex to prepare its way. A noise did not in the case of B and C so disturb the subject as especially to interfere with the placing in readiness of the parts of the brain concerned in making the reaction. If the brain was busied by adding 17 after 17, it could not so well put the lower centres in readiness, and the time of the reaction was lengthened. On the other hand a great effort of the will could only slightly shorten the reaction by holding the path of communication and motor centre in a state of more unstable equilibrium.

There is still another way of distracting the attention. When the time of normal reactions was measured the stimulus came about a second after the signal (*i.e.*, the starting of the chronoscope), so the brain parts could be put in a state of complete readiness. It might be expected that we could not hold these parts very long in a state of unstable equilibrium, and experiments show this to be the case. Instead of always letting the stimulus occur from $\frac{3}{4}$ to $1\frac{1}{4}$ sec. after the signal, I let the maximum interval be about 2 secs., and obtained the results given in Table IX.

The averages show that the attention can be held strained, that is, the centres kept in a state of unstable equilibrium for 1 sec. B's time is slightly shorter than normal; this is probably

TABLE IX.

	B				C			
	R	V	R′	V′	R	V	R′	V′
27. II.....	148	10	149	7	155	9	155	5
	136	9	139	6	147	11	148	6
28.....	139	9	139	6	143	12	142	6
	156	10	154	6	157	11	158	7
4. IV.....	146	16	145	10	162	12	159	8
A.....	145	11	145	7	153	11	152	6

because he strained his attention more, and thus held the centres in more unstable equilibrium than usual in spite of the longer interval. C's time, on the other hand, is slightly lengthened, concentrated attention not shortening his times, and the delay interfering with the maximum of readiness. In like manner the interval between signal and stimulus was varied at the pleasure of the experimenter between normal and fifteen seconds. The experiments recorded in Table X. were made with both light and sound.

TABLE X.

	LIGHT.				SOUND.			
	B		C		B		C	
	R	R′	R	R′	R	R′	R	R′
27. II.....	200	198	170	168	184	173	174	169
28.....	204	196	164	164	176	173	167	166
	168	161	wanting.		168	164	154	147
4. IV.....	159	158	184	181	171	171	173	166
5.....	178	174	174	176	158	159	170	166
A.....	182	177	173	172	171	168	168	163
AV.....	22	14	16	11	23	13	22	13

It will be seen that the times are considerably longer than normal; the mean variation is also large.[1] The first series made

[1] On two occasions with B, I varied the series on sound with results worth noting. I let towards the end of the series the interval between signal and stimulus become regular and normal. B did not notice that any change in method had taken place, but his reaction-time after the first two trials became 40σ shorter. That is, without any conscious effort, the brain-parts concerned were put in the usual maximum state of unstable equilibrium.

on B gave especially long times; afterwards he learned to accommodate himself better to the conditions. All these experiments show that in the case of C the reaction is more thoroughly reflex than in the case of B. Contrary to my expectation the reaction on sound seems to be more lengthened by distracting the attention than the reaction on light; it requires less effort to react on the sound, the reaction seeming to take place quite of itself, and we know that it is easy to make motions in time to sound-rhythms.

I made further series of experiments in which 'Jetzt' was said and the chronoscope was set in motion as usual, but the light was produced only half the time. My thought was that the subject could not put his brain-centres in the maximum state of unstable equilibrium, lest the motor impulse should be discharged in the case where no stimulus was forthcoming. The averages in Table XI. are from 13 and 10 reactions, as measurements were only made in half the experiments of the series.

TABLE XI.

	B				C			
	R	V	R'	V'	R	V	R'	V'
27. II.	153	18	147	10	174	22	165	8
	148	10	148	6	166	18	160	8
28.	154	23	148	15	142	6	143	5
	165	20	157	10	154	12	156	6
	157	9	156	7	153	12	150	8
A.	155	16	151	10	158	14	155	7

The delay here caused is related to the will-time to be considered later on.

From these experiments we see that ordinary degrees of attention do not greatly affect the length of the reaction time. We find, further, grounds for assuming that the cortex is not concerned and that perception and willing are not factors of the reaction-time. It is not necessary to perceive the stimulus before the motor centre can be excited; and the willing—not of necessity given in consciousness—is done before the stimulus occurs, and consists in setting the brain-parts concerned in a state of readiness.

(To be continued.)

VI.—DISCUSSION.

HABIT AND PROGRESS.

By Alfred W. Benn.

In the recently published work of Sir Henry Maine on *Popular Government*[1] there is one chapter which trenches on the sphere of mental philosophy, and which therefore offers a fitting subject for discussion in Mind. This chapter is entitled "The Age of Progress" (pp. 127-95), and suggests by its heading the point to which I wish to call attention. For, unless I very much mistake his meaning, Sir H. Maine would maintain that Progress in the sense of continuous improvement, so far from being what most of us have hitherto considered it to be, the very law of history, is merely a local and temporary phenomenon, destined perhaps to be succeeded at no distant date by a stage of immobility or retrogression. It is true that the author's views are expressed in language so tentative, so ambiguous or so vague, and are hedged round with so many limitations, that the general drift of his argument is by no means clear. By Progress he sometimes seems to understand no more than change, and by change the desire to have things altered rather than the objective fact of their being altered quite independently of our wishes on the subject; while again, the passion for innovation is supposed to prevail only within the sphere of legislative activity. Still the following passages point to conclusions of a much more sweeping character:—

"An absolute intolerance even of that description of change which we call political characterises much the largest part of the human race, and has characterised the whole of it during the largest part of its history. Are there any reasons for thinking that the love for change, which in our day is commonly supposed to be overpowering, and the capacity for it which is vulgarly assumed to be infinite, are, after all, limited to a very narrow sphere of human action, that which we call politics, and perhaps not even [*sic*] to the whole of this sphere?" (p. 136).

"The natural condition of mankind (if that word 'natural' is used) is not the progressive condition. It is a condition not of changeableness but of unchangeableness. The immobility of society is the rule; its mobility is the exception. The toleration of change and the belief in its advantages are still confined to the smallest portion of the human race, and even with that portion they are extremely modern. . . . When they are found, the sort of change which they contemplate is of a highly special kind, being exclusively political change" (p. 170).

In discussing such questions as the present it is important to define our terms. Sir H. Maine professes never to have seen any definition of the word Progress (p. 131); which looks as if he had

[1] *Popular Government:* Four Essays. By Sir Henry Sumner Maine, K.C.S.I., LL.D., F.R.S., &c. London: John Murray, 1886. Pp. xii., 261, 8vo.

never cared to examine the works of thinkers so well known as Auguste Comte and Mr. Herbert Spencer. However, to make up for the deficiency, he offers us as his own definition "the continued production of new ideas" (p. 191). But this seems at once too wide and too narrow. Too wide; for to constitute a step in advance an idea ought surely to be true as well as new. Too narrow; for certain changes not involving any new idea are universally admitted to be elements of progress. For example, 'the gratifying diminution of crime,' about which we hear so much, is, if real, an unquestionable social advance, although it does not in the least enlarge our intellectual horizon. On the whole we may fairly assume that whatever contributes to the increase of happiness is an element of progress; and that the totality of such contributions constitutes the sum of social progress. Experience shows that the specific means to this paramount end are increase of knowledge, increase of power and increase of goodness; including of course under the notion of increase the decrease of their opposites, ignorance, weakness and vice, and measuring it by the degree of diffusion no less than by the degree of accumulation. Now, if the philosophy of evolution proves anything at all, it proves that progress so defined has been continuous either in part or whole throughout the entire duration of human history, and, in a wider but still an analogous sense, throughout the history of organised life since its first appearance on the globe; while continuous change of some kind, whether or not it should be called progress, is equally characteristic of the inorganic universe. At any rate, the burden of proof is not on those who assert but on those who deny the existence and perpetuity of such a process.

Furthermore, so far as organised structures are concerned, the Darwinian theory comes in to prove that this great law is no mere empirical generalisation, but a necessary consequence of simpler laws. For, granting there to be no inherent tendency to improvement in the various forms of life, individual or associated, the forms enjoying some accidental superiority multiply at the expense of the less favoured, which they eventually supplant.

Nor is this all. The age in which we live is remarkable not more for the number and variety of advances, scientific, mechanical, social and moral, that it has seen achieved, than for the fact that in it the process of universal evolution has, so to speak, become conscious of itself; and this self-discovery has excited to the utmost men's hopes of future development. For not only is it expected that the agencies to which we owe so much will continue in operation for an incalculable time, but also that, by being understood and artificially stimulated, their rate of operation may be indefinitely accelerated. Thus what Sir H. Maine considers an unreasoned, if not an unreasonable, enthusiasm for change as such and only in the direction of political revolution is really enthusiasm for change in the right direction throughout every order of human activity. If reformers

look forward with confidence to the establishment of more salutary institutions and to the enactment of more beneficent laws, they count with even greater confidence on the attainment of a still higher perfection in the arts of communication and locomotion, of nutrition and education, of attack and defence.

But "the truth is" (to use a favourite phrase of his own) that Sir H. Maine, while he has made special contributions of great value to the theory of evolution, never seems to have grasped that theory as a whole, nor fairly to have faced its implications. His is a pre-scientific mind. His earliest laurels were won in a campaign against the metaphysical idea of Nature, and his dislike for that idea has driven him to the opposite pole of thought. I have elsewhere endeavoured to show that, when the idea of Nature first came into prominence, it was met by the counter-idea of what the Greeks called Nomos, that is to say, convention, custom or subjectivity; and that this became the rallying point of a school whom I have called Humanists, but who are perhaps most generally known as Sceptics. The note of this school is an excessive dependence on the unanalysed opinions and feelings of mankind, whether individual or corporate, and an equally excessive estimate of the part played by voluntary effort or chance in shaping the course of human affairs. Thinkers with such a bias still attribute much more importance to the arbitrary and accidental elements in history than those of the opposite school. This, it seems to me, is the characteristic weakness of Sir H. Maine. Traces of a similar tendency crop up now and then in the writings of a still more eminent thinker, John Stuart Mill. Mill also was a great enemy of Nature; but, remarkably enough, he made war on her in the interest of those democratic tendencies which the author of *Popular Government* watches with such distrust and dislike. Finding certain social arrangements, which to him seemed highly inexpedient, consecrated as natural and therefore indefeasible, he sought to prove, and, in my opinion, did prove, that natural is not synonymous with right. The two publicists also agree in attributing to forms of government a great influence on human happiness. But, while to Mill the enfranchisement of classes hitherto excluded from political power meant the promise of new and valuable additions to the existing stock of ideas, to Sir H. Maine it threatens the possible extinction of originality and the loss of what has been gained under a monarchical or aristocratic *régime*. For, according to him, progress, whatever else it may mean, means change of some sort, and change runs against the grain of average human nature, even continuing to be unacceptable for some considerable time after its introduction. With this point we enter on the very heart of the discussion.

In order to prove the profound unpopularity of change much stress is laid on the force of Habit; the repulsion excited by what we call bad manners is ascribed to the same inbred conservatism, while the evidence of Oriental races and of women in all countries

is invoked to establish its existence. After studying this imposing array of arguments, one feels inclined to exclaim, 'You have convinced me that progress is impossible!' Nor would our author be easily brought to admit that he had committed the fallacy of proving too much. By a rapid and brilliant series of parallels he shows or attempts to show that after all there is not much difference between the civilised man and the savage (p. 143). On the whole, however, it may be assumed that a state of civilisation as much superior to ours as ours is to the condition of the Fuegians or even of the Zulus would constitute a considerable step in advance. And if we are moving towards such a state the cause of the modern reformer is gained.

It seems then that a fallacy, or possibly more than one fallacy, must lurk in the argument. To begin with, the force of habit is enormously exaggerated, as also is its antagonism to progress. Granting, what is not true, that individual habits are unchangeable, the habits of a race stand on a different footing, being easily modifiable in the course of transmission from one generation to the next. Such a modification is greatly facilitated by the circumstance that a complete change of habits must be submitted to three or four times in the course of an ordinary life—on going to school, on entering society, on adopting a profession, on marrying. The voluntary acceptance of one change involves many others from which there is no escape. Again, by submitting to a single change, we may be enabled to perform a number of customary actions with greater ease or greater security from interruption. The substitution of railways for stage-coaches involved a great change in the habits of travellers; but owing to the increased rapidity of locomotion they were enabled to resume their ordinary occupations within a shorter period. So any reform that diminishes the risk of arbitrary government, war, pestilence, famine, crime or other disturbance is so much gain to habits of steady industry. Nay, change itself may become a habit, as we see in the case of those excursions to the sea-side or the mountains annually undertaken by whole families at the cost of much temporary inconvenience and discomfort; the habit of some being to visit a different locality every summer. Among educated people there has grown up a habit of expecting some new invention or discovery to be made at pretty frequent intervals, and some disappointment is expressed if they have to wait for it long.

With regard to manners, Sir H. Maine is led by his characteristic exaltation of arbitrary convention completely to ignore the reasons on which they are founded. To believe him, we feel disgust at what are called bad manners simply because we are unused to them. This is indeed putting the cart before the horse. Good breeding becomes a habit in time; but it begins with a deliberate preference of certain actions as less repugnant than others to our innate or acquired sensibilities. There are ways of eating which betray complete enslavement to the animal instincts; there are others associated with an imperfect adjust-

ment of means to ends in the management of the implements devoted to that purpose. It is as such that they offend us, not because they are unusual, for the contrary is too often the case. On this point we can appeal to a most incontrovertible sort of evidence, that which is supplied by the respective attitudes of the parties concerned. When what we call ill-bred and well-bred people are brought together and seated at the same table it is the taste of the latter only that is offended; and the same remark seems to be true of persons belonging to nationalities occupying different grades of civilisation, but holding certain general notions of decorum in common. The ordinary Cappadocian mode of employing a knife, fork and napkin is profoundly repugnant to the Lesbians, whose manner of eating is on the other hand regarded with indifference or even with admiration but never with disgust by their Continental neighbours. It is the same with pronunciation and grammar. There is a certain standard recognised by all educated persons, and of this a rational account can be given. It is habitually disregarded by the majority of the people, yet correct speaking never offends them, however unfamiliar it may be to their ears. It is only misplaced aspirates and violated concords that are visited with ridicule or contempt. As Mrs. Carlyle would have said, the reciprocity is all on one side. Custom merely strengthens a feeling that it did not create. Of course there are cases in which disregard of a purely arbitrary rule calls forth expressions of dislike, sometimes amounting to actual hostility, among those by whom it is habitually observed. But here a breach of etiquette, in itself innocent enough, is presumed to argue either want of education or unfamiliarity with the society in which painful impressions are most carefully avoided and pleasurable impressions most sedulously fostered. Thus in the last analysis we find not blind adherence to custom as such but a most reasonable preference of good to bad customs among some, and a certain *vis inertiæ* retarding or preventing their adoption by others.

The argument that progress or change of any kind is distasteful to great numbers, perhaps to the great majority of human beings, would have more weight were it addressed to an inhabitant of Jupiter or Saturn without the means of discriminating between Europeans and Asiatics. As it is, we might as well argue that yellow or dark skins and straight or woolly hair were more essentially human than fair complexions and wavy locks, because the latter belong to a minority of the earth's population. Moreover, in determining the general character of human nature it is less legitimate to reason from the east to the west than *vice versâ*. For, while the one has been constantly moving the other has not been always stationary, and even now offers some symptoms of awakening from its secular torpor. Meanwhile the enthusiast for progress rests his hopes on the vitality of liberal ideas in Europe and America, even should they be destined never to extend beyond those regions. So with the alleged conservatism of women. Put

this as high as ever you please, and the inference will still remain irresistible, that, having advanced so far without their help or even in spite of their opposition and, what is more, having compelled them to follow us, we shall be able to pursue our onward journey with no more difficulty than before.

But the evidence offered for this intensity of female conservatism is such as to make us doubt its reality; for a cause which so powerful a logician can defend by no stronger arguments than are here adduced must be weak indeed. Apart from the commonplaces of the subject, most stress is laid on two considerations: the constancy of women as evinced, among other authorities, by English fiction, and the character of that fiction itself. The first argument is entirely beside the question, for constancy is a virtue even more necessary to the friends of progress than to its foes, and just as likely to be exercised on its behalf. The second argument must detain us longer. English fiction, we are told, while "ever more written by women and read by increasing multitudes of women" (p. 141), is inseparably wedded to old-fashioned ideas. Studied alone, "the very last impression it would produce would be that we had lived in an age of feverish progress" (p. 140). A more astounding assertion has seldom been made. For, considered simply as an art, English fiction has passed since the beginning of the century through various stages of evolution involving vast and continuous changes in the choice of subjects, in the mode of treatment, in the underlying conception of life; while in this evolution at least two women have played a decisive part. And, besides this movement of its own, English fiction has reflected every other contemporary movement, practical or speculative, the ambition of the most recent writers being to reproduce with photographic fidelity every tendency of the time. With regard to the opinions of the novelists themselves we have Sir H. Maine's own authority, if any authority be needed, for the fact that Dickens, the most popular writer of his age, devoted his life to the reform of abuses (p. 153); and Mr. Wilkie Collins, whom a recent plebiscite has declared to be the most popular of living novelists, has followed in the same track. Among the most distinguished lady-novelists of the day, at least one is a democrat, a socialist and an agnostic; and, speaking generally, no motive is more hackneyed than the exaltation of the poor at the expense of the great, the titled and the rich. It is true that ridicule is sometimes thrown on reformers; but that is because the novelist makes it his business to exhibit the ludicrous side of everything, and a laugh is at least as often raised at the expense of bigotry and obstruction as of needless or precipitate subversion.

The fact that women change the fashion of their dress much more frequently than men seems at first sight somewhat inconsistent with the theory that they are absolutely intolerant of innovation. Sir H. Maine notices the objection, but is ready with an explanation. What we call new fashions, he tells us, are not

really new but the revival of some ancient mode. Thus an apparent exception is triumphantly used to prove the rule. Such a method of reasoning looks very like a vicious circle. The supposed repugnance of human nature to progress was first inferred from its adherence to habit and custom; then, when we show that half the community—and that too the half claimed as the more conservative—constantly indulges in changes of the most conspicuous kind, we are told that the change is not progress but oscillation. Sir H. Maine refers to the fact that certain figurines discovered at Tanagra represent women draped in a style somewhat resembling the fashions of the present day. Does he suppose that the drapery thus unconsciously revived was any the less unfamiliar to his own countrywomen at the time when it was first introduced among them from its having been worn twenty-two centuries ago by Greek ladies? This would be interpreting the "eternal feminine" in an over-literal sense. At any rate most if not all the Radical measures now proposed have their parallels in ancient history, so that on the Tanagra-figurine-principle they ought to be secure from feminine opposition.

The truth is that one need only walk down the nearest street with open eyes and ears to be convinced that women are quite capable of accepting an improvement or change—call it whichever you will—involving a considerable break in the routine of their daily life. Either an enormous poster setting forth the advantages of somebody's sewing-machine, or the whirring sound of the instrument itself in actual operation, will remind us of a most important revolution in domestic industry, effected to all appearances without exciting the slightest opposition on the part of the class most interested, forming as it does a large proportion of the female population. Unquestionably the prejudices of women are enlisted, to a greater extent than those of men, on behalf of authoritative methods both in life and thought. But this tendency would, if anything, prepossess them in favour of that more active legislation which the author of *Popular Government* tries to exhibit as directly at variance with the conservative spirit of the masses.

If there is any force in the foregoing considerations they seem to show that the average European mind entertains no insuperable or deep-rooted hostility to progress or even to change as such. And from this it follows that the advent of the majority to political power need not necessarily be signalised by the reversal or cessation of that continuous onward march which has hitherto characterised our western civilisation. But there are still more decisive reasons for cherishing such a hope. Had the majority been anti-progressive there are other ways besides parliaments and ballot boxes through which they could have made their will be felt. It is forgotten that each new invention and discovery has been submitted to a plebiscite not the less authoritative from being informal and silent. The discovery can only be established

by gaining credence; the invention can only survive by gaining custom. No general council or supreme pontiff has made faith in the earth's motion binding on the popular conscience. No despot or aristocratic senate has given a monopoly to printing-presses and steam-engines. These and all other products of creative originality could have been stifled at their first appearance by the simple process of 'boycotting' them, had the people cherished that irrational suspicion of novelty attributed to them by Sir H. Maine. And one fails to see why the people acting in their corporate capacity as legislators should exhibit a stupid intolerance quite alien to their character as individual customers and consumers.

The perpetuity of progress is a result suggested by history, in harmony with the dynamic law of nature and inevitably guaranteed by the survival of the fittest; nor do any empirical observations on the mental constitution of man really lend countenance to an opposite conclusion. Nevertheless there are certain considerations very different from those indicated in *Popular Government*, leading us to suppose that the rate of progress is liable to retardations or disguises rendering it imperceptible through long periods of time. First of all, it must be remembered that, while the diffusion of the means of happiness over a wider surface is no less truly a mode of progress than their accumulation within a single class of the community, it is often a much less brilliant and interesting process, and consequently sometimes escapes the notice of political observers. Thus to make the whole population of Europe participators in the gains of Græco-Roman civilisation was a long and laborious operation, sufficient while it lasted to engross all the available energies of humanity. To treat the thousand years or so which elapsed between the age of the Antonines and the earliest Renaissance as a period of decay and barbarism is to ignore this important fact. And it may be asked whether the so-called immobility of India and China is not conditioned by an analogous elevation of less advanced to an equality with more advanced races. For, although it would be rash to say that the two processes of accumulation and diffusion vary inversely as one another, there seems to be a more or less fluctuating balance of compensation between them. For example, the striking dearth of original production among ourselves, and indeed throughout western Europe, at the present moment becomes explicable only when viewed in connexion with the efforts simultaneously made to raise the condition of the lower class and to improve the education of all classes.

Now, supposing these benevolent efforts to be continued and eventually crowned with success to the extent, let us say, of establishing among our own labouring population such a degree of comfort as already prevails in our Australian colonies, with the prospect of no more rapid increase of its numbers than is observed in France; then the general contentment might

prove a serious barrier to further progress. For if, as French peasants say, *le mieux est l'ennemi du bien*, it may also be said that *le bien est l'ennemi du mieux*. It may be asked why "the continued production of new ideas" should not go on as before, or even with accelerated speed. The answer is, I conceive, that intellectual activity is derived from the energy accumulated in the course of a prolonged struggle with the difficulties of material existence, and suddenly set free by the abatement of those difficulties for employment in a higher sphere.

Again, with a greatly augmented store of knowledge, a vast multiplication of useful arts, and an increased complexity of social arrangements necessitating increased intelligence and activity on the part of the governing classes, together with increased docility and co-operation on the part of the governed—the work of preserving and transmitting what was already won might leave no surplus of energy available for adding to the store. The constant complaints of overstrain and the death or permanent disablement of so many young men who have sought to combine tuition with original investigation seem to show that this is no imaginary danger.

Finally, there is a possibility, though certainly at present only a remote one, that a single language, a single race and a single type of civilisation may drive out or absorb all others over the entire surface of the habitable globe. For if there is one lesson more than another taught by history, it is that intellectual progress is not continuous in any single community, but has to be taken up in turn by different members of the human family, and is conditioned by their mutual reaction. The records of literature, art and science show that no great efflorescence of national genius lasts very long, and that each is distinctly traceable to an impulse received from without. The immense productivity of ancient Hellas and mediæval Italy was doubtless due in great part to their division into a swarm of rival commonwealths possessing rapid means of intercommunication, while widely contrasted in their physical surroundings and spiritual traditions. It is obvious that with such an effacement of national characteristics as is here anticipated this source of stimulation would be lost. The mental condition of mankind would then resemble the dynamical condition of matter known, I believe, to physicists as entropia, that is, the uniform distribution of heat over space, —an arrangement which, so far as can be foreseen, would put an end for ever to cosmic evolution. It seems likely that the realisation on a small scale of such a condition may have much to do with the stagnation of Oriental races, separated as they are by physical and linguistic barriers of the most impassable description. It would, however, be folly to concern ourselves seriously about an eventuality whose approach can be neither verified nor delayed, and which may after all be compatible with an assured well-being more than equivalent to the labour spent by all previous generations as a condition of its attainment.

VII.—CRITICAL NOTICES.

A Handbook of Psychology. By J. Clark Murray, LL.D., F.R.S.C., Professor of Mental and Moral Philosophy, M'Gill College, Montreal. London: A. Gardner; Montreal: Dawson Brothers, 1885. Pp. x., 422, cr. 8vo.

In his prefatory note Prof. Murray intimates explicitly that his work is designed solely as an introduction for students to psychology, and he is certainly entitled to claim that any estimate of its contents shall bear in mind the limits so imposed. No one who has any acquaintance with the present state of psychology would hesitate to admit with Prof. Murray that "there are problems, still unsettled, which affect even the fundamental principles of the science"; and to allow that obstacles of a very serious kind beset any effort to expound the subject in an elementary fashion. So much is this the case, that one's interest in an elementary treatise concerns mainly the method adopted for overcoming the inherent difficulties of the treatment. In this country, what has been called psychology has acquired by tradition the place of propædeutic discipline for philosophy generally, and for one reason or another it has been insisted that, whether or not psychology be the fundamental philosophical science, it is only through the portal of psychological analysis that the student can be safely introduced to the temple of speculation. In defiance of traditional nomenclature, however, one might maintain that the propædeutic analysis commonly described as psychology, the merits of which need not be called in question, is not psychology at all, does not involve the special notions that characterise psychology as a science, and rests but little if at all on psychological analysis of mind. Further, it may fairly be contended that when there are taken into consideration the kind of problem that a scientific psychology has to attempt, the means at our disposal for attacking it, and the success that has hitherto attended efforts at its solution, no subject can be deemed less well adapted for introductory purposes, no subject lends itself more grudgingly to elementary treatment. In saying so, I am by no means insensible to the weighty argument by which in this Journal the tradition of the English psychological method of approaching philosophy has been enforced and defended. I fully admit that in following up psychological analysis the investigator may be brought in contact with all the deepest problems of general philosophy; but then exactly the same must be said of every separate philosophical science, and to say it is merely to emphasise the fact that philosophy is, so to speak, a closed circle. From whatsoever point one starts, continuous progress will involve in the long run just the problems that would be faced had one started elsewhere.

No divisions within philosophy are absolute. Separation of one branch from another rests merely on restriction of aim, on adoption of some particular point of view. But so soon as it is acknowledged that relative divisions within the sphere of philosophy as a whole are to be admitted, it becomes barely possible to find any other ground of division than the purely logical one: the order of the parts should correspond to the involution of the notions implied. The complex, that in the isolated statement of which manifold assumptions are inevitable, cannot be regarded as the fundamental, and its treatment cannot be looked upon as that to which all others refer. That the matter of psychology occupies this position of highly complex object is hardly, I think, denied. That the psychologist has to employ from the outset certain notions and to draw certain distinctions, justification of which has either to be found elsewhere or in his own science if he allows it to expand till it becomes synonymous with philosophy at large,—an expansion, as before said, perfectly intelligible,—this, too, seems generally admitted. Probably any opposition to it rests on the common but illegitimate identification of 'subjective' with 'psychological'; an identification, however, peculiar to the English tradition, and not to be found in any of the great constructive philosophies, either ancient or modern.

At the same time it may be contended—and the truth of the contention in its general terms must be unhesitatingly granted—that the logical order of the several branches of philosophy does not determine their didactic order. We are familiar, in respect to the objective sciences, with the practical application of the Aristotelian maxim, and we make no hesitation there in employing a partial presentation of some body of truths, adapted to the stage of mental power rather than to the systematic relation in which it stands to the whole. The same practice, it may be claimed, should be followed in philosophical education. Let us begin there with what is nearest to the learner's own experience, in the hope that the treatment, though admittedly imperfect, will form the basis on which a more complete view may afterwards be rested. Even if a complete view of the elements, processes and forms of development of the mental life be not capable of presentation as an introduction to philosophical reflection, why should not the same hold good in respect to psychology that is acknowledged in regard to, say, theoretical physics, or botany? Elementary mechanics is intelligible as an introduction to the higher researches, and can be presented in a fairly systematic fashion. The student of botany begins with concrete facts, and gradually pushes onwards to insight into the naturally prior laws, elementary statement of which is impracticable. Why should there not be an empirical introduction to psychology, a general treatment of the well-marked and familiar distinctions in the forms and stages of the mental life—a treatment confessedly imperfect, yet sound within its own limits, and

through which the more recondite problems might advantageously be approached? It may even be said—psychologists have not been backward in saying it—that relatively to mind the learner is placed in an unusually favourable position, for he has his raw materials, so to speak, at command. I would not deny that we are thus able to form the idea of a relatively elementary handling of the problems of psychology; but it seems to me that there are greater difficulties to be overcome than the argument allows to appear, and that the admission is far from settling the question as to whether psychology in its elementary form is the natural and best introduction to philosophical culture. On the first of these two points a single remark may be permitted.

The habitual knowledge of mind with which we start in psychology or in any philosophical discipline seems to me to impose obstacles rather than to afford aid to psychological analysis. Experience, practice and language have brought about a multiplicity of distinctions familiar enough to us in our direct, non-reflective knowledge of mind. Of the facts so distinguished we become aware not through knowledge of the differing mental processes involved in them, but mainly through differences in the immediately apprehended contents of the various experiences. Recognition of such differences is often called psychological analysis, and a philosophical treatment which involves them is often said to be based on psychology. This is hardly correct; subjective recognition of a distinction in the content of two experiences does not imply either the attitude peculiar to psychology or the ultimate aim characteristic of that science. For example, the distinction in the Kantian philosophy between Intuition and Notion, between Sense and Understanding, is often called psychological, whereas it appears to be based solely on the directly recognised differences in apprehended contents, and to be independent of any special explanation as to the mode in which, in the individual concrete life of mind, the several ultimate factors combine in producing a definite result. Now all such differences become fixed in language as specific mental processes; they are the familiar *powers* or faculties of mind, a term not at all inappropriate when taken within the sphere where the differences manifest themselves. But as regards psychology proper, they are obstructive abstractions; and though psychologists have long been in agreement in rejecting the ill-formed theory of faculties, they have not always insisted on the total change of attitude which is involved in passing from these abstractions to the analysis of the real processes making up the mental life. It is possible that a series of analytic studies which should start from the familiar ground of our theoretical or practical experience, and work backwards to a statement of what is needed for psychological explanation, might form an excellent introduction to psychology: it is certain that any elementary but systematic treatment of mind will find itself in continual danger if the essential distinction be-

tween the two modes of viewing mental activities be not kept in sight from the first.

It appears to me that Prof. Murray's praiseworthy volume furnishes unmistakeable evidences of the risks just alluded to. The position it occupies is midway between general subjective analysis and psychology in the stricter sense—midway, *e.g.*, between such treatments as that of Hamilton and that of Herbart or Lotze. It has the merits and defects of its position. Like Hamilton's *Lectures*, it is an excellent and stimulating introduction to reflective philosophy in general, but it endeavours also to be a systematic psychology, and the two functions can hardly be discharged simultaneously. Where the attitude is least that of the psychologist proper, Prof. Murray is at his best; the sections on the Feelings, on Idealisation, and the briefer discussions of visual perception and of the *primum cognitum* are admirable specimens of his expository method. Where the business is peculiarly the analysis of the forms of mental processes, Prof. Murray does not seem so successful. The section on the Will, and in particular the meagre notice accorded to the function of Comparison, but poorly represent even the present incomplete state of our knowledge. It is, however, the structure of the whole work that illustrates most pointedly the peculiar difficulty in which his treatment has involved him,—a difficulty, as I think, due to quite general causes. Prof. Murray adopts a division, beginning to be familiar to us, into General Psychology, a treatment of the elementary factors and fundamental processes of the mental life, and Special Psychology, the handling of the more complex forms which come forward in the development of mind. Under the first falls the consideration of Sensation and of the processes of Association and Comparison; under the second, Cognitions, Feelings and the Will. The author shows himself fully aware of the extreme difficulty of defining an elementary fact or process of mind, but he contents himself, in regard to Sensations, with a condensed and on the whole not unsatisfactory summary of the familiar psychological propositions respecting sense-presentations. In regard to Association, his treatment, which is both interesting and instructive, concerns rather the laws of suggestion among formed *Vorstellungen* than the ultimate links of connexion through which continuity, coherence and development in the mental life become possible. The section on Comparison is quite unsatisfactory, merely refers to the three logical laws of thought, and, when viewed in conjunction with the later sections on Generalisation and Reasoning, can only be interpreted as signifying that Prof. Murray has not yet brought his logical training into any intimate relation with his psychology. Now, were one to take Prof. Murray's general assertions regarding these elementary facts and processes literally, we should understand him to mean that out of the qualitative differences, quantitative changes and variations in the conditions of the origination of Sensations,

taken in connexion with the laws of Association and Comparison, the character of the more developed forms of mental life is explicable. Nothing can be further from his real view. The value of these elementary facts and processes is as nothing compared with the importance of certain other contributions, notice of which is only extended in connexion with the treatment of the more complex mental forms. Thus we gradually discover that, in Prof. Murray's view, recognition of Self is an elementary factor of mind, and that through its existence only can there be explained the transition from Sensation to Perception; that Space- and Time-quality in the content apprehended by sense (*Räumlichkeit* and *Zeitlichkeit*, terms for which English equivalents are much needed) are likewise contributed to, not given in and by, the elementary facts and processes; that "the act of intelligence, by which we are conscious of sensations, projects these into an objective sphere, transmuting them into qualities of objects, and thus forming out of them a world that is not ourselves"; finally, that the thought of an "essential connexion, so that the one cannot appear without the other, is a new thought, wholly different from either or both of the terms in the sequence". In fact we learn that all the more important factors in mind have been excluded from the review of elementary data and processes, and that these elements, if to be retained as constituents arrived at by analysis and abstraction, are actualities in mind only as parts of processes much more complex than themselves. Such a result, it seems to me, is natural and inevitable, if one tries to force into the mould of a systematic psychology, materials, the character of which has been determined on quite other than psychological grounds. It is perhaps a concomitant effect of the same cause that Prof. Murray should have omitted so much that recent researches have shown to be of psychological importance: the nature and development of attention, the conditions of localisation, the recognition of the body and of its distinction from extra-organic things, the origin and development of the sense of individuality, the common elements involved in the series of processes designated simply Knowing, Feeling and Striving.

If, however, one cannot recognise in Prof. Murray's book a method of treatment that is truly and successfully psychological, it by no means follows that his work has not high merit as a general introduction to philosophy. Such merit it seems to me undoubtedly to possess. It is written in excellent style and with a genuinely philosophical spirit; that it should not contain a thorough investigation of the notions and method peculiar to psychology is certainly not to the detriment of the purpose which it has in view.

ROBERT ADAMSON.

The Larger Life: Studies in Hinton's Ethics. By CAROLINE HADDON. With some unpublished Letters of JAMES HINTON. London: Kegan Paul, Trench, 1886. Pp. xviii., 217.

This little volume will be welcome to those, and they are many, who wish for some additional light on the philosophical and ethical views of James Hinton. The author, Miss Haddon, is specially qualified for the task, from the close intimacy which subsisted for many years between herself and the lamented writer whose views she represents. The selected Letters contained in the Appendix, which are one of the most interesting features of the present volume, form part of a correspondence between them, some being hers but most his.

With the exception of these letters and of two papers in the body of the work, "An Analogy of the Moral and Intellectual Life of Man," and "What we can know," which have been already printed in *The Art of Thinking*, the volume consists of papers which give in the author's own words, or in one instance in the record of a dialogue with third persons, an independent sketch of the main points of Hinton's philosophy. And this throwing into shape, by a disciple, of what in the master's own writings has a certain indefiniteness of outline, cannot but prove a boon to those who would correct or verify their own impressions as to the real drift and burden of the theory as a whole.

The author has tried (Preface, p. vii.) "to reproduce some of his ideas in her own words"; to give a picture of the man and his philosophy with perfect candour, without suppressing "those parts of his teaching which he deemed essential, but in which he had never carried her entirely with him, and from which the common opinion would dissent most strongly" (p. xiii.). Nevertheless we are distinctly warned, that "it is only a small corner of this thinker's mind that she has attempted in these pages to reveal, and that in selecting the portions of his work to expound she has purposely left untouched those which presented most that was difficult and repellent. Her aim has been to help the student to grasp the general principles on which the master is to be interpreted, and not to justify every detail of their application" (p. xiii.). Just before, when speaking of Hinton's character as a revolter against conventions, the author had said: "Fifty years hence Hinton will probably be recognised as a more 'dangerous' man than he is now; just as Kant, according to Heine's saying, held the whole French Revolution in his theories, to be evolved by inevitable deductions" (p. xii.). If this and this only is the kind and measure of the danger which lurks in Hinton, we need not indulge in any very alarming degree of disquietude.

We may gather from the above that, if it is but "a small corner" of Hinton's mind that is here presented, still it is that corner which contains the philosophical and fundamental principles of the whole. The matters kept back, in which the danger-

ousness, if any, would consist, are apparently matters rather of application in detail than of theoretical principle. Taking, then, the philosophy as so presented, we shall find it fall naturally, as every philosophy should, into the two main branches of speculative and practical. Hinton avoids the error, too prevalent with Englishmen, of seeking to *rush* the questions of Ethic, without previously settling their foundations in the general analysis of experiential knowledge. Nothing can appear more futile to an unprejudiced observer than to treat either Ethic, Logic, or Psychology, or attempt an independent theory of any of them, without previous settlement of the basis they are to stand on in general subjective analysis. It is like beginning to build a house with one of the top storeys, leaving the foundations and the ground floor to be inserted afterwards. The house would be all in the air, and so is the theory.

All true philosophy must take the opposite course, a course well described in a saying about Plato, quoted by Coleridge in *The Friend* (vol. iii., p. 126, ed. 1837): "Plato's philosophising, if any man's, was genuine and thorough; and his principle was, that it was impossible for us to see the truth in matters of ordinary experience (*τὰ ἀνθρώπινα*), without first obtaining an insight into their metaphysical basis (*τὰ θεῖα*)". (Coleridge is not responsible for the translation.) Yet the press may be almost said to teem with works on Ethic, Logic, and Psychology, which show little or no perception that a basis in the general analysis of conscious experience is necessary to their stability, necessary to the ascertainment of the place they hold in the total fabric of human knowledge and conduct.

Hinton's Ethics come first for treatment in the present volume, in the two papers entitled "Philosophy and Ethics," and "Utilitarianism and Altruism". The last paper, "A few Notes on Hinton's Theology," contains his speculative basis. Between these come the two papers of Hinton's already mentioned, and two papers by the author, "The Lawbreaker," and "A Law of Development," the latter being the longest in the book, which exhibit the connexion and analogy between the practical and the speculative, and a theory of the general mode in which errors both practical and speculative, both of conduct and of knowledge, are corrected as man's history advances. The chief point about the law of development is its containing what in Hegelese might be called *Aufgehobensein;* the new truth, or the new custom, at once destroys *and* fulfils what it destroys; a point the earliest expression of which is met with, at least so far as I am aware, in the Gospels. This is very well put by the author, and this paper, as well as "The Lawbreaker," will well reward perusal.

These two papers are followed by a sketch of a more personal character, "Hinton the Seer". He is here contrasted as Seer, that is as representing the function of *seeing* as opposed to *saying*,

with Carlyle as Prophet, who excelled in the power of uttering what he saw:—

"It was in the ever-present and overpowering consciousness of the spiritual reality underlying all material phenomena that Carlyle and Hinton resembled each other. . . . Yet even in their insight they were very different; Hinton surpassing Carlyle as much in the depth and clearness of his spiritual vision as he was inferior to him in his individualising faculty, and that firm grasp of men and things which gave Carlyle his power as historian and dramatist. Carlyle did not 'see with the eyes shut' as well as Hinton, but he saw much better than he with them open" (p. 123).

It remains to speak briefly of the two main branches of Hinton's philosophy as they are here presented. The value of this little volume, as the author plainly acknowledges, does not consist in its adding anything to the systematisation or demonstration of Hinton's views. Its value lies in its showing what Hinton's views *were*, as they appeared to a critical disciple, and so helping others to a more complete ascertainment and estimate of them. Criticism of the views themselves, of Hinton's philosophy as such, would here be entirely out of place. Suffice it to say, on this point, that a certain want of systematisation, a certain lack of coherence, which is observable in Hinton's philosophy as presented by himself, in his various writings, remains equally observable in the book before us, and to that extent suggests the anticipation that the philosophy may prove ultimately incapable of being thrown into a systematic shape.

Two things seem evident about it. First, its Ethic belongs to the Christian line of thought, as opposed to the Eudæmonistic,—the line which makes the good and the right consist in the temper and frame of mind of the agent while acting, as opposed to that which makes them consist in results of any kind, near or remote, aimed at or intended by the agent, even including the case where the agent's own moral perfection is the final end. Utilitarianism and Hedonism, both egoistic and altruistic, are special modes of the latter line of thought. Thus we find in the dialogue on Utilitarianism and Altruism the following statement:—

"The useful thing is what ought to be done no doubt, but not because it has a value in itself, but because of the moral qualities evolved in doing it. I ought to care that my neighbour is fed and clothed, but it is my moral condition, not his material comfort, that is of real importance. The 'uses' must be made the means not the end." (P. 24, and see also pp. 30 and 206.)

It is however left in great doubt how this great principle is to be carried out, and in what the criterion of right action is to be placed. How the "law of service," of acting for "others' needs," is either to be applied as a guide to conduct, or to be harmonised with the fundamental principle of acting from a feeling of duty and not for "results," are points which remain wrapped in pro-

found obscurity. See the two interesting Letters, xii., xiii., containing questions by C. H., and the reply by J. H.

The second point is, that, in its speculative branch, the philosophy is of the Transcendental and Idealistic type, but its Idealism is peculiar. The material world appears to us as material or physical, because we, who are essentially spiritual beings, are to some extent *dead*. Otherwise, *it* also would seem to us living, spiritual, immaterial, or at least not consisting of *inert* matter; "the inertia he [man] is forced to think of as outside is really within" (p. 134). What Hinton means by *inertia* is not very clear. Newton indeed spoke of matter having a *Vis inertiæ*, equivalent in meaning to *Vis insita*, but this is the very opposite of its being *inert*. It seems as if the conception of matter which Hinton here combats was a popular conception merely, and not a scientific one.

It is at p. 133, in "A few Notes, &c.," that we first find a statement of "the fundamental philosophical doctrine which underlay all his theology":—

"Now this fundamental doctrine is, that there is a defect, a negation in man, whereby the active spiritual existence becomes to him passive and material; and that this condition is what the Bible calls his 'death'."

But is this what the Bible calls his death? That is one question. Is it true that, in the Bible, the "physical" "is but the way in which the non-perception of the spiritual is expressed"? And again, is the perception of the Self identical with the perception of the physical? (p. 135). There seems to be a confusion of thought here, which requires working out and reducing to harmony. It requires to be shown that the perception of a physical world is identical with the perception of self; that both are identical with a spiritual death; and that this is the meaning of *death* in the Bible.

That Hinton's philosophy is really based on this triple identification is clear from passages in a remarkable letter from him, dated May, 1868, Letter ii. in the present volume.

"But some time ago I saw—alike in history and in *necessity*—that this is the course through which thought goes—must go, starting with the feeling of [the] phenomenal as existing, and yet being, as it must be, really related to and springing from the actual.

"The first thought ascribes to the phenomenal (*imperfectly*) actual qualities.

"The next, based on examination of the phenomenal, and on the more or less complete discovery of its qualities, assigns to existence phenomenal qualities. These two stages must precede the discovery of the nature of our own experience as feeling the existence of phenomena.

"So there is the fetish world—living, active, but utterly mistaken as applied to the physical. Then inert matter and force—taken as the *existence* of the world, &c." (p. 150).

This passage clearly identifies the perception of "inert matter and force" with a deadness or want of insight in us. The follow-

ing passage, from the same letter, identifies that defect, and that perception, in us, with the perception of self:—

"This experience of ours is *God becoming conscious of Self* (not *himself*, just that little difference is all that is wanted). The becoming conscious of self and death are one. And so we see, since the creature's existence is the Creator's in him, this death of man is God becoming conscious of self:—just as Christ gave up His life in becoming physical. And the thought has an universal application. It is the same as the old thought, at least old to me, that creation is by a minus, and must be, to our thought, God *limiting Himself*; and each act of creation—*i.e.*, each creature—surely is rightly to be thought of as some particular form of *limitation* accepted by the Creator. In man He accepts this form of limitation—of becoming conscious of self, that is, of giving up *life*" (p. 154).

The remarkable theory sketched in these words bears in one point, the identification of God's consciousness with man's, a striking likeness to that which is elaborated by T. H. Green in his *Prolegomena to Ethics*, and there also serves, like Hinton's, as the basis of an ethical system. I allude more particularly to sec. 67 in book i., chap. 2 of that work, and am not suggesting anything as to the likeness or unlikeness of the two systems in other respects than this, which is probably due directly to their common Transcendentalism, if so it is to be named. For instance, the great importance attached to the ideal of mutual service is common to both; but, on the other hand, the note of mysticism which is apparently struck in the passage last quoted from Hinton, in which God apart from his creation is represented as self-less, that is, impersonal, would find, I think, no echo in Green, who lays great stress on the identification of spirit with personality, defining both alike by the essential characteristic of distinct consciousness of Self.

But the mysticism is apparent only, and vanishes when we consider that Hinton drew a strongly marked line between our apprehension of the "actual," the spiritual, the divine, by the intellect alone, and our apprehension of it by the moral faculties, which in his view as far transcend the mere intellect as this transcends the mere senses (pp. 56-7, compared with p. 135). In other words, the moral faculties with Hinton have a similar place and function to those of the "practical reason" with Kant. When Hinton speaks of God apart from his creation as self-less, he means that the mere intellect can conceive him only as a Self, and that his Being transcends that conception.

Still it must be remembered, that these views remain with Hinton in the shape, or at the stage, of assertion of an insight, and are not supported, as in the case of Kant and of Green, upon any independent inquiry either into the ultimate analysis of consciousness, or into the ultimate constitution of the mental faculties. Kant's *Critick of Practical Reason* is based upon his great previous work, the *Critick of Pure Reason;* but there is no corresponding substructure to Hinton's theology or ethic. Even the necessity

for regarding Nature as the phenomenon of a noumenon, or in Hinton's phrase an "actual," is left undemonstrated; and yet some proof of this is requisite before that "actual" can be identified with God. However closely we might be in accord with Hinton's insights, still it would be necessary to have his analytical or constructive grounds for them alleged, before we could admit their right to criticism as a philosophy. But, as matters now stand, in order to criticise Hinton's philosophy, it would be necessary first to construct it. Since this is plainly impossible for a critic, Hinton occupies a position of considerable security. It is also one of considerable dignity. It is one which he shares with Coleridge.

SHADWORTH H. HODGSON.

On the Ethics of Naturalism. ("Shaw Fellowship Lectures, 1884.") By W. R. SORLEY, M.A., Fellow of Trinity College, Cambridge; and Examiner in Philosophy in the University of Edinburgh. Edinburgh and London: W. Blackwood & Sons, 1885. Pp. 292.

In the present state ot ethical speculation this book—which gives, in revised and enlarged form, the lectures delivered by Mr. Sorley, as Shaw Fellow, in the University of Edinburgh—is of peculiar importance. Even if it is from the "naturalistic ethics" which the author finds inadequate that we expect the best definitive results, yet criticism may be admitted to be more valuable just now than new developments. For the ethical theories founded on the doctrine of evolution are in part inconsistent with one another; and, as Mr. Sorley makes prominent, some of them are claiming to supersede rather than to continue the hedonistic ethics of the earlier stages of "naturalism" or experientialism. Those experientialists, therefore, who are desirous of finding in what direction their general doctrine of morality ought to be developed cannot do better than study such a thorough and careful criticism of that doctrine as is offered in Mr. Sorley's book.

The essence of a great part of Mr. Sorley's criticism is contained in the following passage:—

"The ethical writings of the evolutionists often confuse the problems of history and theory in a way which presents the same difficulty to the critic as the works of the corresponding school in jurisprudence. . . . Everyone is now familiar with the evils of hypothetical history, and with the iniquity of the proverbial philosophic offence of constructing facts out of one's inner consciousness. The historical jurists deserve no little credit for the thoroughness with which this has been enforced by them; perhaps too the same lesson may be learned from the facts of the development of morality. But it may be questioned whether we are not at the present time more apt to confuse fact and theory in the opposite way: whether the science of law is not sometimes lost sight of in the history of legal institutions, and ethics in danger of being identified with the development of moral sentiments and customs." (Pp. 114-5.)

The same criticism in other forms is brought against the utilitarian doctrine and against "egoistic hedonism". All naturalistic theories alike confound investigations of what is or has been with the determination of what ought to be. A separate chapter (Pt. i., c. 4) is devoted to the "ethics of moral sentiment" of Shaftesbury and Hutcheson, which is found to occupy an insecure position between the empiricism or naturalism that "denies to reason any spontaneous or creative function" and the opposing theory of rationalism. By no naturalistic or semi-naturalistic theory, the argument runs, are we enabled to pass from the point of view of science to the point of view of morality. Only the doctrine that ascribes spontaneity to Reason, that sees the reality of things as a system of relations in a universal self-consciousness, and that introduces the notion of end or purpose into its view of the world as a whole, can furnish a valid philosophy of ethics.

In the part of his book that deals specially with the hedonistic theories (Pt. i., cc. 2, 3), Mr. Sorley puts very well most of the arguments that have been urged against utilitarianism as an ethical doctrine and against its psychological basis. It will be best, however, to pass rapidly over this portion of the work. Hardly any one who accepts the theory of evolution can hold that this theory makes no difference to the position of utilitarian ethics; and Mr. Sorley himself believes that evolution has come not to fulfil hedonism but to destroy it. His chapters on the theory of evolution, therefore (Pt. ii., cc. 5-8), are those that it is desirable more particularly to examine.

Perhaps Mr. Sorley attaches too much importance to the rejection of hedonism by some evolutionists. Especially in modern times the ascetic bias is a constant cause tending to prevent moralists from being avowedly hedonistic; and the appearance of a new scientific theory, with important ethical bearings, naturally had for one of its earliest consequences stimulation of the research for a non-hedonistic basis of morals. Hence we need not regard this opposition of evolution to hedonism as inherent in the theory itself. Doctrines such as those which make "work" or "efficiency" or "complexity" ends in themselves are partly expressions of the ascetic bias, partly, we may suppose, voluntary illusions intended by their authors as prophylactics against pessimism.

But Mr. Sorley, of course, does not confine himself to the argument from the actual developments of evolutionist doctrines in ethics. Standing over against the non-hedonistic theories, there are the more important systems of Mr. Spencer and Mr. Leslie Stephen. Much criticism is devoted to showing the inadequacy of these attempts to combine hedonism with evolution. Mr. Sorley candidly admits that he is not convinced by the pessimistic arguments; but he contends that, since an exact pro-

portion between progress and pleasure has not been shown, "we must make our choice between evolutionism and hedonism".

If we decide for "evolutionism" three interpretations of it are possible. The end may be stated as "increase of adaptation" or as "increase of complexity" or as "increase of life". But none of these formulæ can give us any independent ethical ideal. Notwithstanding the attempts of evolutionists to explain the notion of "higher," which, both as applied to conduct and to pleasure, has been taken by the hedonistic schools from current moral opinion, they have not succeeded in getting at any fixed point of view of their own for judging rationally what kinds of conduct are really higher in the scale of development. We must therefore quit the ground of "empirical evolution" as incompetent to determine practical ends, and pass to the view of evolution as the expression of an internal teleology.

Mr. Sorley's conclusion as to the relations of pleasure and progress does not seem quite sufficient to prove the incompatibility of hedonism and "evolutionism". Such an "exact proportion" as he requires is unnecessary. The theories of Mr. Spencer and Mr. Stephen ought really to be regarded as "hedonism with evolution," not as an "alliance" of two independent doctrines called "evolutionism" and "hedonism". Considered simply as rational doctrines of the end of conduct, they are hedonistic; the theory of biological and social evolution is to them only an aid for determining the *axiomata media* of ethics. The questions to which, in order to maintain themselves, they need an affirmative answer are, according to Mr. Sorley, these: "Is hedonism, as Mr. Spencer affirms, a form of thought in ethics?" and "Can the theory of evolution give us any aid in determining what kinds of conduct contribute to the end as already fixed?" Obviously the second question is subsidiary to the first, not co-ordinate with it. But before considering these points more closely, it will be best to describe Mr. Sorley's positive contribution to ethical theory (Pt. ii., c. 9, "On the Basis of Ethics").

His teleological view of evolution (which is not to be confounded with the old "external" teleology) leads him to affirm as the end of man "self-realisation". The transition from the point of view of science to that of morality, which has been found not to be possible empirically, is possible "transcendentally through self-consciousness," because "in self-consciousness we reach the element of identity between knowledge and action". For "the ultimate self-consciousness," knowledge and action are indistinguishable. The being of things and their teleological determination by the absolute Reason are one and the same. For "the finite self," on the other hand, there is a distinction between knowledge and action, "correct if not pushed to the extent of making an absolute separation between them". In human beings "conscious volition only follows a conceived want, a recognition that the self as imagined—the ideal self—is not

realised in the actual self. The action is towards a fuller working out of the idea of self; and the end may therefore, in all cases of conscious action, be said to be self-realisation." This end "must not be looked upon as a feeling—for, if it is, it can only be interpreted psychologically as pleasure—but as simply conscious self-realisation". It is the idea of a progressive self-realisation that makes the notion of evolution intelligible.

Is there any escape here from Mr. Spencer's proposition quoted above? To decide this, we have only to ask how self-realisation, if it has no subjective accompaniment of feeling which is regarded as preferable to other feelings, can be itself an object of preference. It may be said that this feeling exists indeed, but is not part of the end. On the principles of Mr. Sorley's philosophy, however, this exclusion of feeling from a state of which it is the inseparable accompaniment seems to be an illegitimate "abstraction". Of course there is a meaning in the practical direction to think of self-realisation rather than of the feeling that accompanies it (or is part of it); but, because this is a useful practical direction, it does not follow that a certain type of feeling is not ultimately the test of self-realisation, or even (as some hedonists have held) that this feeling is to be excluded as much as possible from conscious thought.

Mr. Sorley's theory has no more power than the theories of evolutionists to evade the hedonistic test. And by the application of this test to every theory in turn we obtain proof of the necessarily hedonistic character of all determinations of the end of conduct. For the rest, the formula of "self-realisation" may be admitted to be better than most of the alternative formulæ. It is in some respects superior to "altruism"; for, if this points more directly to the social character of the ethical end, "self-realisation" has the merit of insisting more on the worth of the individual life. And, unless the individual life has a worth of its own, service to the community can of course have none. This is sometimes forgotten in modern exhortations to altruism. Perhaps, however, justice is not quite done to the evolutionist formulæ, such as "adaptation". Rolph, for example, whose work on ethics was reviewed in MIND, Vol. x., 281, and who is referred to more than once by Mr. Sorley, makes it clear that ethical adaptation for man must consist in adaptation to the social and not merely to the inorganic environment. The formula of "increase of life," which Mr. Sorley finds less inadequate than "adaptation" and "complexity," is certainly rather general, and even vague, till it is interpreted; but then so also is the Hegelian formula.

How are we to decide, for example, whether self-realisation shall be in the practical or the æsthetic or the theoretical life? The formula can obviously be applied with equal validity to all three. Is it then rightly described as an ethical formula? Or is it not rather a formula of "the art of life" in general, which in-

cludes both ethical and other ends? And in applying it to practical life, how are we to determine what is man's true mode of practical realisation of the self?

The answer given by Mr. Sorley is, of course, that since the individual man is an organic part of society his true self-realisation in conduct must be social. Now it is exactly here that the theory of evolution becomes applicable to ethics. The social application of the Hegelian formula is really determined, not by a dialectical process, but by a more or less complete doctrine of historical evolution. Similarly the hedonism of the utilitarian school was conditioned by a social doctrine, according to which man, if, as critics point out, he is still regarded as an "isolated individual," is at the same time brought into relation with others by sympathy. What the disciples of Mr. Spencer are entitled to claim is that the theory of evolution in its full sense, as he has comprehended it, is capable of giving still more definite guidance to the formulæ, by themselves too vague, of "greatest happiness" or "self-realisation".

"Self-realisation" has, no doubt, one advantage over "happiness" as a statement of the nature of the highest good. It excludes from the sphere of ethics those incidental pleasures that have nothing to do with the attainment of ideal ends. These pleasures, which are the true object of the "hedonical calculus," really belong to an outlying portion of "the art of life". This is what Clifford seems to have in view in the passages referred to by Mr. Sorley in a note on p. 6. Clifford argues that "happiness" (regarded as a sum of pleasures) does not concern ethics except in so far as it makes men better citizens. But, if happiness of the kind referred to has no strictly ethical value, it does not follow that it has none at all. For the rest, Clifford's position is not really inconsistent with the view that happiness of a certain kind is part of the ideal end. This happiness may perhaps be distinguished from isolated pleasures as being the accompaniment of an activity of the whole personality, and not merely of some partial stimulation. There is a distinction of this kind in Spinoza.

The evolution-theory of ethics, Mr. Sorley remarks in one place, oscillates "from the theory which looks upon the *summum bonum* as pleasure to that which finds it in activity" (pp. 199-200). This last view is especially that of Clifford, as developed, for example, in his article on "Cosmic Emotion" (*Lectures and Essays*). But, as has been seen, Clifford's ethical doctrine is not in itself anti-hedonistic, any more than the theory that makes self-realisation the end. With the doctrine of self-realisation it has much in common. The idea of a social and individual activity of man put forth in opposition to the forces that tend to make him mechanically adapted to his environment—an activity from within by which he becomes "more organic"—may indeed be claimed as a justification, on the ground of "empirical evolution," of the really distinctive idea of the "rationalistic" school. And

"self-realisation" of man as a social being would be a good expression of Clifford's ethical doctrine so far as it is founded on the idea of activity.

There is finally, however, an important metaphysical difference between the inclusion of activity or spontaneity among the elements of experience and the rationalistic doctrine held by Mr. Sorley, which introduces the notion of end or purpose into its view of the world as a whole. But does this difference affect the theory in its bearing on ethics? While agreeing with Mr. Sorley as to the close connexion of ethics and metaphysics, we may still find it hard to understand how it can make any difference with respect to the end or highest good of man whether man's end is also the end of the whole movement of things.

The teleology which Mr. Sorley's school regards as the supreme category under which things can be thought, may present itself to another school as a kind of imaginative anticipation of a theory of universal evolution, rather than as the final outcome of a scientific law imperfectly conceived by its discoverers. Even the "external" teleological theories had the merit of pointing out biological facts that needed scientific explanation, and at length found it. Similarly, we may hold, the idea of a universal Reason determining the movements of history was not a mere metaphor, but pointed to an evolutionary law of the phases of human society considered as an organism. In ethics, of course, "teleology" (in one sense) is supreme. An ethical system must bring all knowledge under "the category of teleology" with a view to determining its bearing on the end of man. But when we consider things theoretically, then it is the conception of law that is supreme. We are no longer at the ethical point of view: and to the impartial outlook of the theoretical reason the good of man is no longer anything but a term of a single series among innumerable other series of events in a process of universal change.

T. WHITTAKER.

Scottish Philosophy: A Comparison of the Scottish and German Answers to Hume. By ANDREW SETH, M.A., Professor of Logic in the University College of South Wales and Monmouthshire. ("Balfour Philosophical Lectures," University of Edinburgh.) Edinburgh and London: W. Blackwood & Sons, 1885. Pp. xii., 218.

Mr. A. J. Balfour's public-spirited act in endowing (for three years) a philosophical lectureship in the University of Edinburgh has here borne excellent first-fruits. In the university of Stewart and Hamilton, no subject could have been better chosen for the initial course of lectures than a comparison of the Scottish, and more especially of their master Reid's, answer to Hume with that German one which in later days has forced the other almost out

of hearing. Prof. Seth has done a good work in bringing fairly into view, without exaggerating, Reid's merits, and he has also been able, within his limits, to give marked effect to the founder's desire that "the lectures should be a contribution to philosophy and not merely to the history of systems". As an express effort to bring directly face to face the opposed philosophical schools of the present day, the lectures are specially welcome. They are, as usual with the author, very well written, and show him not less anxious than ever to understand and allow for the point of view of those from whom he differs.

As Reid set out—even more expressly than Kant—to answer Hume, and saw in Hume the natural term of that movement of modern philosophy which had been started by Descartes and had received a new direction from Locke, the first third of the course of six lectures is occupied with a review of the "Philosophical Presuppositions" which Hume took from his predecessors and of the "Philosophical Scepticism" into which—not partially, like Berkeley before him, but completely—he ran them out. In the next two lectures, Reid's own doctrine—especially of Sensation and Perception, upon which he spent his strength—is considered, and his deficiency of philosophical system gives the occasion of passage to the Kantian "Answer" which at least was free from shortcoming in that respect. Shortcomings enough appear, however, arising from Kant's readiness to make admissions to Hume which the wiser Reid had withheld; and the last third of the course is occupied first with an exposure of the particular superstition of "Relativity of Knowledge" which Kant imposed upon his adherents, including Hamilton within the Scottish school itself, and then with a consideration of the help towards philosophical system that may be had by the truer heirs of Reid's saving common sense from Kant's profounder successor, Hegel, whose "analysis of the conceptions of reason as reason" is pronounced "an indefinite advance on anything that had gone before it in modern philosophy".

The account of Descartes and Locke, in the first lecture, is remarkably good. It would be impossible to bring out more clearly and succinctly the inability of the "two-substance" doctrine of the world to afford any explanation of perception or knowledge. This doctrine, with its mediating factor of "ideas," Locke took in all essentials from Descartes; and, if he had not done service otherwise to the philosophical theory of knowledge by giving the chief impulse to scientific psychological inquiry in modern times, his halting and wavering application of it must have kept him from ever winning any place of importance in the history of philosophical thought. Berkeley is lightly passed over in the transition (made in the second lecture) to Hume,—on the just ground that Hume, while drawing directly from Locke the principles that he carried out to the fateful results, received at most from the younger thinker mere aid and suggestion;

but something might have been said of the positive advance upon Locke that Berkeley did not fail to make in point of psychological theory, recognised as this was not more by Hume than by Reid himself. And, apart from any concern of Reid, the like omission is to be observed in the handling of Hume. While Prof. Seth brings out in a most effective way the negative, or at least purely sceptical, character of Hume's ultimate results, and argues with reason against a late attempt to represent him simply as a constructive philosopher, acknowledgment might still have been made of the serious purpose with which, as the Introduction to the *Treatise of Human Nature* shows, he set himself to the task of bringing the "science of man," after Locke, into some kind of line with the physical science of Newton and others. Nor even as a general philosopher, in respect of that part of the philosophic function which his champion Prof. Huxley had not least in view, *viz.*, the providing of a theory or explanation of the special sciences, can it be said that Hume is devoid of all constructive aim. Opinions may differ as to the sufficiency of his theory of physical, still more of mathematical, science; but if we are to take him, as Prof. Seth desires (p. 70), "at his own valuation,"—not only again in the Introduction but throughout many chapters in the body of the *Treatise*,—we may hardly deny that, in the uncertain mixture of his intellectual temperament, there was after all a considerable dash of the genuine positive spirit.

Reid's great merit, on the question of perception, is declared to be his clear insight (in general) into the impossibility of giving any explanation of that function from an assumption of unrelated sensations, to be afterwards brought, by one means or another, into relation. Prof. Seth thinks that the most advanced psychologists of the present day have been driven, practically, to the same position, which he would himself express in the form that, though indeed "sensation is the condition of perception," "sensation as sensation does not enter into perception at all" (p. 93). Here we need not follow him into what he finds well—or again not quite well—said by Reid, but may remark that, in seeking to apply the modern psychological doctrine of "local signs" against a vain distinction made by Reid between the cases of visible and tangible extension, he gives it first, on pp. 90-1, some rather questionable expression, and then is led on to use language about both visual and tactile sensations—that they "must contain some specific indication or hints as to the whereabouts of the object if our location of the latter is not to be purely arbitrary"—which does not seem to consist very well with the denial (just quoted from next page) to "sensation as sensation" of any import for perception. That denial is, surely, much too absolutely made. It is plain that in the philosophical analysis of objective perception (or percepts) any elements of sensation that are disclosed must appear as ordered or related in manifold fashion, as also that, even

for the individual, any the simplest actual sensation must already figure as part of a general system of experience; but it seems not less plain that from another point of view—which is the properly psychological one—sensations may and (for purposes of science) must be regarded as unrelated. The organs of the different senses, though all physically connected through the one nervous system, have a relative independence, and may in different degrees be called separately, or when not separately then at least distinguishably, into play. While passive sensations like light and sound can be had to all intents and purposes wholly apart, it is possible also to get at the elements of what appears, at first, as a unitary sense-experience of the active sort (touch, vision, &c.)—because the co-efficients (of passive sensation and so-called muscular sense) may be made to vary relatively to one another. Now, unless it be maintained consistently that the psychological investigation of the various kinds of sense-experience has no bearing at all upon a theory of objective perception, there can be no ground for complaint that they are viewed, in the first instance, as far as possible, in isolation. From this ground, we have seen, even Prof. Seth cuts himself off; still more Reid, who never desired to make any distinction between philosophy and psychology (such as is now from any point of view seen to be necessary), while he was most earnest in his wish to proceed upon a psychological basis. Reid might therefore very well have gone much further than he did in the way of such (psychological) assertion as Prof. Seth shakes his head over at p. 88. He was safe enough against thinking (with Hume) that any manipulation of psychological factors, as such, could of itself, straightway, account for a knowledge of object.

The want of system in Reid's statement and description of the principles of knowledge is brought clearly into view; at the same time, nothing is passed over that may help to recover for him the philosophic character which it has been the fashion to deny him since the time of Kant or since Kant's depreciatory opinion of him became known. Specially interesting, in this connexion, is the reference to the various passages in the *Intellectual Powers*, where Reid seeks in the forms of language a clue—or more than such a mere "clue" as Kant, in corresponding case, sought from the school-logic—to the principles, as he called them, of "common sense". When the function of language in producing and maintaining community of knowledge among men is once considered, its philosophical import is seen to be of the most profound and far-reaching character; and Reid, with his "common sense," is to be blamed only for allowing the more important use of the word "common" to be overshadowed by its other implication of 'ordinary' (as having relation to everyday experience and practice). In making what reference he did to language, he shadowed forth a surer method of philosophical analysis than Kant, with all *his* more laboured art, was able to devise.

Kant—not for the first time—gets somewhat hard measure from Prof. Seth. However ready to acknowledge his large manner in comparison with Reid's, the lecturer is no sooner embarked upon an examination of the Critical Philosophy than he finds (like Dr. Hutchison Stirling) so much to except to in its fundamental positions as to side rather, in the end, by preference with the modest Philosophy of Common Sense. Though refusing to accept the home-grown product under its name of Natural Dualism (which, of course, brings back the "two-substance theory" in an aggravated form), he has, apparently, little or no objection to it under its other guise of Natural Realism. On the other hand, Kant's categories are, after some consideration, pronounced "useless because they simply do over again what is already sufficiently done in the objects themselves" (p. 140); as, again, it is claimed for Experience that, so far from being identifiable with mere sensation or contingency, it "yields to the knower objects and relations of objects which are, to begin with, just what the categories are supposed afterwards to make them" (p. 142). Later on, in the fifth lecture, the Scottish philosophy is expressly congratulated upon its escape from the dangers of Kant's subjectivism "by taking up the broad position that while the principles in question [pure percepts of space and time and categories] are referable to the constitution of our nature, our nature is, in respect of them, in complete harmony with the nature of things" (p. 157). And even in comparison with the method and achievement of Hegel, it is suggested, in the last lecture of all, that the Scottish procedure may yet lead to a more satisfactory determination of the ultimate questions of human concern. This suggestion is to receive further development in the coming second course of lectures, which may also give the best occasion for considering what is here said on the help to be meanwhile sought from Hegel towards that end; but as between Kant, on the one hand, and Reid, with the truer upholders (than Hamilton) of the Scottish tradition—"writers like Prof. Calderwood, Prof. Flint and Dr. M'Cosh of Princeton" (p. 183)—on the other, it may be asked whether the making of such round assertions about reality, object and the like, as data of direct experience, does not come perilously near to abandoning the philosophic task altogether. Prof. Seth, like Reid before him, makes no difficulty about surrendering the secondary qualities of matter to the relativist, let straightforward experience say of them what it likes, but would draw the line, for perception, at Aristotle's 'common sensibles,' and speaks of these as an absolute directly apprehensible by "reason in sense" (p. 154). Why, though 'common,' should they have an absolute objective character ascribed to them as against Kant's subjectivist interpretation, which at least explains how they can be—as they have to be—combined in perception with the 'special sensibles,' allowed to be subjective? Or—giving the question an expressly, instead of (with Kant) an implicitly, psychological form—why

should they not be referred to an origin which, while distinctly marking them off from the varying 'special sensibles' with which they are interfused, explains what variability there yet is to be found in our apprehension of themselves? The psychologists and Kant, from their different positions, have then, indeed, a serious enough task before them to explain what we all mean by object; but the work of philosophy is serious—more serious than Reid, at least, ever quite imagined, once he was frightened back by Hume from that 'doctrine of Ideas' which (he tells us himself) he once believed so firmly as to embrace the whole of Berkeley's system along with it.

Apart from some questionable arguing upon the line here suggested, there is a great deal of sound and seasonable doctrine in the lecture on "The Relativity of Knowledge". It bears with telling effect against the relativism of Kant and Hamilton, and only does not seem to touch the Phenomenalists proper who are here too indiscriminately ranged with the Relativists over against the more "fortunate" Natural Realists of unadulterated Scottish breed. Indeed, Prof. Seth himself may be thought to reason with no small force in support of a pure phenomenalism from p. 167 onwards.[1] However that be, enough should have been said to draw attention to these Balfour Lectures. The second series will be neglected by no reader of the first.

EDITOR.

Les Principes de la Morale. Par ÉMILE BEAUSSIRE, Membre de l'Institut. Paris: F. Alcan, 1885. Pp. 307.

It is pleasant to find German ideas combined with French lucidity of exposition and grace of style. Such a combination forms the most conspicuous charm of the interesting treatise which M. Beaussire has here given us.

The book begins with a chapter on "La Crise actuelle de la Morale" which reminds us that in France the contact of moral philosophy with life is closer than it is in England. The divorce between the teaching of the pulpit and the ideas of thinking men is more pronounced: on the other hand scepticism is more destructive: and the "spiritualistic" moral philosopher writes, like the Stoic of ancient Rome, with more consciousness of a practical aim than in England or in Germany. It is noticeable that M. Beaussire complains that the actual moral tone of lay society in clericalist circles, as exhibited for instance in the tone of their newspapers, is no higher than that of their anti-clerical opponents.

The most weighty portion of the work follows—the book on

[1] Is Prof. Seth quite just to Locke at p. 169, when, after quoting a sentence from the *Essay*, he in the next sentence changes Locke's "*ideas* of particular things" into "proper names"?

"Morale Formelle," which contains an admirably clear exposition of the central ideas of Kant, separated with great care and judgment from the confusing mass of arbitrary technicality and extravagant paradox in which they are held in solution in the philosopher's own writings. The most obvious difficulties which embarrass the student of Kant who tries to "bring down philosophy from heaven to earth" and apply Kantian principles to the conditions of everyday life are—(1) the austerity with which the principle of the "autonomy of the will" is carried out, so that an action done from love of one's father is pronounced as completely non-moral as an act motived by avarice or appetite; (2) the utter failure of Kant to provide a workable criterion of morality without having recourse to the forbidden principle of utility. M. Beaussire's mode of dealing with the first of these difficulties is striking and valuable as far as it goes, if it is not completely satisfactory. He treats Kant's principle of duty for duty's sake as an ideal—as the formal ideal of a perfectly moral act. In actual life there may be acts which are at every degree of nearness to or remoteness from this ideal, but the moral element in the act is, in all cases, the love of right which it exhibits. We should necessarily have this "formal idea" of a perfectly right action even though no action fully satisfying its conditions had actually been performed. This is what seems to be implied in such passages as the following:—

"Le premier principe de la morale ne peut être un idéal de perfection, mais un idéal formel, un idéal nu pour ainsi dire, dont la conception et la réalisation soient indépendantes de toutes les conditions si complexes et si variables auxquelles est soumise la nature humaine dans l'ensemble de ses éléments et dans le cours de son évolution à travers les differentes phases de la vie individuelle et de la vie de l'espèce. La volonté autonome offre seul ce caractère. Dégagée, par sa définition même, de toute considération extérieure, elle ne demande, pour être conçue, qu'un effort d'abstraction et, avant même de se produire en une idée nette et distincte, elle se réalise sous une forme plus ou moins pure dans tout acte de vertu" (p. 100).

The second difficulty, the inability of the principle of "autonomy," when taken by itself, to furnish any content for the moral law, is fully admitted (p. 173). The clear distinction drawn between "formal" or "subjective" and "objective" good, is one of the great merits of the book. An action is not in the full sense moral, we are told, unless it is both subjectively and objectively good (p. 172). But neither concept can be deduced or extracted out of the other. The objective good which every subjectively good action must aim at realising *includes* the formal good, *i.e.*, the subjective rightness of other wills as well as of the agent's: but it is impossible to get out of a purely formal conception of good into a concrete good such as is capable of forming a τέλος of action without introducing the notion of happiness. "L'idée de l'utile est la seule qui puisse donner à la morale un objet précis sans l'emprunter à la morale elle-même. Tout ce qui est utile n'est

pas morale, mais tout ce qui est moral est utile" (p. 192). In other words, the happiness by conducivity to which the morality of actions is to be estimated is one which includes goodness. "Il ne faut jamais oublier que le plaisir n'est un bien que dans la liaison avec d'autres biens" (p. 225). I must, however, confess to some disappointment at the way in which the principles laid down on pp. 192-3 are worked out in detail. The logical connexion between the author's view of the nature of moral obligation and his view of the moral criterion is not brought out with quite the clearness and cogency which one would have liked to see. The author more and more towards the end of the book seems to lose the moral philosopher in the moralist. Not that he degenerates into mere platitude: many excellent and thoughtful contributions are made to a "théorie des devoirs"; but the practical sagacity, judgment and moderation of the author's eclecticism are sometimes more conspicuous than the strength of the logical bond which connects together its component elements. After his strong statement of the necessity of a consequential criterion, it is unsatisfactory to be thrown back upon that vaguest of all evasions of the ethical problem—"a harmonious development of all the faculties":—

"Or, pour la nature humaine, l'intérêt bien entendu tel que nous l'avons défini, se résume dans le développement harmonieux de toutes les facultés" (p. 282).

It is true that in the next sentence we have a clever exposition of the author's view of the τέλος or sovereign good:—

"Il comprend donc le bonheur comme la vertu; mais il ne comprend le bonheur que dans son accord, dans son harmonie avec la vertu. Là où cet accord n'existe pas, le malheur de l'honnête homme ou le bonheur du coupable est contraire à son véritable intérêt et il appelle, pour rétablir l'équilibre, l'action de la bonne volonté, de la volonté autonome. La 'sanction de la morale' ne contient pas d'autre mystère."

This, with what follows as to the demand of the moral consciousness for an ultimate reconciliation of virtue and happiness, is all that could be wished. But surely this is not all that is meant by a "harmonious development of *all* the faculties"; and yet, if M. Beaussire means more than this, he does not tell us what that meaning is.

But notwithstanding a certain want of mental grip, one could heartily wish that we had in English so good a *résumé* of the general principles of a moral philosophy which is Kantian in its formal basis, consequential though not hedonistic in its view of the ethical criterion. It is to be regretted that M. Beaussire should not have had before him Prof. Sidgwick's *Methods of Ethics*. But to M. Beaussire. Mr. Spencer is to him "the most eminent" of the contemporary representatives of Utilitarianism; and the inconsistency of Mr. Spencer's system with the evolutionary principles on which it is professedly based, is brought out in some very

telling paragraphs of book iii. chap. 2. But he seems to know of no Utilitarianism which, accepting substantially his own rationalistic view of the basis of morality, contends for a purely hedonistic criterion. M. Beaussire's exposition of his own view of the criterion seems to fail a little in definiteness and incisiveness for want of an opponent or rather of an opponent with whom he would have any common principles as a basis for argument. In a second edition, M. Beaussire could not do better than measure swords with Prof. Sidgwick. At present, his book is to be welcomed as a valuable contribution towards that reconciliation between an "Intuitional" view of duty and a Utilitarian view of the moral criterion which Prof. Sidgwick has attempted on other lines. Not unworthy of comparison with the *Methods of Ethics* in literary form, inferior to it in exactness of thought and expression, in argumentative power and unphilosophic thoroughness, M. Beaussire's work is, as I venture to think, far more happy and consistent in its actual solution of the problem.[1]

H. RASHDALL.

Allgemeine Ethik, von Dr. H. STEINTHAL, a. o. Prof. für Allgemeine Sprachwissenschaft, Corresp. Mitglied der Kgl. Ges. d. Wissensch. zu Upsala. Berlin: Georg Reimer, 1885. Pp. xx., 458.

Prof. Steinthal's *General Ethics* is the fulfilment of a hope thrown out at the end of his *Abriss der Sprachwissenschaft*, the well-known work on the Science of Language, of which a notice appeared in MIND 33. There are many signs in Germany of a revived interest in Ethics, due to the prevalence of the strictly mechanical way of thinking, which, while attracting some, seems to impress upon others only more strongly the old distinction of nature and practice. The problem of Ethics, Prof. Steinthal conceives to be "how to preserve the idealism of character, with full recognition of the mechanical world" (p. 18). We need an Ethics which shall be in the mechanical world, but not of it. This need, and the imminence of social changes in the moral conceptions of property and the family, supply an interest to systematic Ethics which they have not had before. The previous lack of interest he attributes to two causes: partly, the strong ethical affinities of the great national literature have dispensed with explicit ethical

[1] The limits of this notice do not permit of criticism on points of detail, on many of which I should disagree with the writer. One of the most conspicuous features of M. Beaussire's system is his very sharp distinction between duties proper and acts which it is good to perform (pp. 71, 169, 182, 192-3, 240-1, 279). He is in fact an ardent believer in "works of supererogation". The basis of the distinction seems to be found simply in the unanalysed affirmation of the ordinary moral consciousness. The question seems to desiderate deeper treatment than is here accorded to it.

systems; partly, the political conditions of Germany have made national unity the primary moral necessity (p. 7). With whatever success Prof. Steinthal has solved the problem he sets himself, his work will be of importance to English readers because it presents a view very unfamiliar in England, that of the school of Herbart. The first half of the book may in fact be regarded as a quite independent elaboration of Herbart's *Allgemeine Praktische Philosophie*, but without the scholasticism which still clings to Herbart in spite of his geniality, owing perhaps to the close compression of his work. Prof. Steinthal's book has the rare merit of a real and striking literary style, and is full of additional interest from its application to pressing practical questions. In speaking of so eminent a writer it would be unbecoming to do more than refer to the kindliness and humanity of feeling, and the force of character and conviction, which give every page he writes the stamp of reality, as the writing of a man who has something to say that is worth saying.

The Introduction gives Prof. Steinthal's view of the nature of Ethics, which he rightly groups along with Æsthetics. Like Æsthetics, it deals not with knowledge but with certain modes of judgment *(Beurtheilung)* expressed in words signifying praise or blame, beauty or ugliness, and embodied in certain feelings which are called Objective or Formal Feelings. The former name distinguishes them from ordinary pathological feelings, which are judgments of self, "the consciousness of heightened or lowered energy of life". These feelings are purely psychological, and admit of no principle: all ethical systems of Hedonism therefore which are based on them are excluded. The objective feelings however are not states of suffering but peculiar activities of feeling which come into existence with the creation of their objects. Their existence is attested by such facts as these: a hexameter is not felt as a series of feet but as a unity, as a single object of feeling; a building again, say a Greek temple, is seen as a whole without distinct knowledge of its parts, and the whole as a unity gives a satisfaction which it would not if its parts were different, just as a triangle affords a feeling of ease which it would not if two of its sides were not continued so as to meet. Just so it is with the ethical feeling of approval: it is a feeling felt at the same time that its object is judged to be good. What then are the objects of these feelings? They are not causal connexions among things such as are the objects of science, but relations of pure form: in the case of art, relations of form of the sensible phenomenon; in the case of moral relations, of will. As such they are most properly called Formal Feelings. Such feelings then are universal: the relations which are their objects are not dependent on the state of the person, nor on mechanical relations of existence of the things in which they are exhibited. The object is an Idea or Picture: in this ideal product lies the meaning of a work of art or of an act of will.

Corresponding to the categories of the understanding there are certain measures of ethical judgment, which are the "forms in which the formal feeling holds its content" (p. 72). These forms are called Ideas, and it is the business of critical Ethics to discover them. They are not conceptions, because they are not contained in actual things but in the formal judgment; nor are they perceptions, because their objects are not real but intelligible; nor lastly are they laws, which, though relations, yet hold their factors apart without submergence into the unity which is the object of formal feeling. A line divided in "medial section" is seen by the observer as three lines, the two parts and the whole line; the artist sees it as the "golden section," a single object created by the relation of its parts. The Moral Ideas then are purely intelligible relations of form, which are the measure or pattern of the Good Will. Prof. Steinthal insists, and justly, that the only Good is the Good *Will*, whose actions are but "the language of will": his insistence upon this point is one of the great merits of his work. But the Idea of the Good is not a psychological form of the will as a mental faculty: it is purely formal, and does not enter as such into the mechanism of the mind, but is a category of judgment. Goodness, therefore, is an intelligible or formal quality of the will, none the less objective because it is good only in relation to the feeling of approbation, for the quality is one with this feeling of judgment.

The First Part is occupied with exhibiting the Ideas which are the elements in the Idea of the Good. They are five in number: (1) the Idea of Moral Personality, (2) of Benevolence, (3) of Union, (4) of Right, (5) of Perfection. This list differs from Herbart's in only one particular: Herbart has no Idea of Union, but he has a fifth Idea, that of Fairness or Equity *(Billigkeit)*, which is absent from Prof. Steinthal's list. The Idea of Moral Personality is the same as Herbart's Inner Freedom. All these Ideas are pure relations either within the will or between different wills. Moral Personality, for instance, is the agreement between the will and the moral insight; not a mere logical relation of subsumption, but of such a kind as that the moral insight shall itself produce the will (p. 99). Thus it is the relation between the will (which is always psychological) and its ideal as given by insight which is moral: morality is a quality of the disposition *(Gesinnung)*: what is moral is character. Benevolence again is a relation between two wills, in which one person adopts the other wholly into his consciousness, a devotion on the one side which needs in the perfect order to be rewarded by gratitude on the other. None of these Ideas must be taken apart from the others: a rascal may be a "perfect" rascal, but the perfection of the Moral Idea is one which is guided by the moral insight of the first Idea: there may be good-will among thieves, but their good-will to one another is ill-will against all the rest of the world. The last and highest of the Ideas is Perfec-

tion, which gives body to the moral personality; but it is not a stagnant state but a progress: perfection consists in becoming perfect. This implies on the side of character Love for the Good, as to be attained in the individual himself and society as a whole. It leads therefore to the conception of an "Intelligible world" above the world of Nature, which is the objective system of which the complete moral personality is the subjective counterpart. This conception the author describes as the keystone of his system, and it plays a very important part in his ethical view of the world.

We may pass over for the present the admirable and suggestive Second Part which treats of the actual institutions in which these Ideas are embodied and of which they are the creators. The question presses for answer, How is this free intelligible world to be reconciled with the nature of the individuals who have to realise it? Freedom is an intelligible Idea, which yet is active amidst the natural life of the psychological man. The answer is given in the Third Part which treats of the psychological mechanism of moral action. It consists in combining a peculiar theory of the will with a distinction drawn already in Part i. between Power *(Macht)* and Force *(Kraft)* (p. 160). The Ideas have Power, but they have not Force; as such they would only be one of the many psychological forces of the mind, but they are purely intelligible. The force of immorality is measured by the strength of bad desires; the power of morality is the degree in which the moral insight prevails, and it is measured therefore by the weakness of opposing desires. Butler is not widely read in Germany, where no one expects to find moral philosophy in a volume of Sermons, but this distinction is of the same nature with the distinction he draws between the *authority* of conscience and the power of the passions, and in point of language less appropriate. The theory of will rests mainly on the principle of the interaction of ideas *(Vorstellungen)*. In the course of a valuable classification of movements, Prof. Steinthal endeavours to show that will, desire and effort are not different from ideas; will and intention signify only that a conscious idea is approved (p. 332). The will is built up from the instructions of the impulses, and in especial from the impulse to imitation, which is explained as due to the innervation of muscles connected with a motion at the sight of that motion in another. But in man reflexes and impulses are lost with the development of consciousness, and every idea becomes accompanied with the consciousness of an end. What is most characteristic of will is deliberateness *(Besonnenheit)* or self-control, and this arises from the inhibition or determination of one idea by another. In this way different groups of ideas excite one another, and one idea within a group excites the rest within the same group. This faculty arises from association, one idea calling another into consciousness; and the excitability of different groups depends upon laws which are set forth on p. 370.

Now the Moral Ideas are not psychological; they do not enter into the chain of cause and effect. Yet they have power *(Macht)*; and because they are presented as ideas *(Vorstellungen)* they also become psychological forces. In this way there grows up a group of ethical ideas *(Vorstellungen)*; and consequently while Freedom still remains an ideal fact, not psychological, it may yet be measured by the degree to which the other groups of ideas are determined by the ethical group. This supremacy of the ethical group it is *duty* to develop, and it is the object of education. Freedom is thus Autonomy, the determination of the will by a self-imposed Law.

In the Fourth Part Prof. Steinthal goes on to complete his ethical theory by a moral *Weltanschauung*. It is for the most part a development of the notion of an objective spirit (which contains the truth of knowledge, the beautiful and the good), but he repudiates the help of the metaphysical conception of an absolute spirit as much as that of religion. There is, he holds, no antagonism between ethics and religion, but moral institutions like marriage stand in their own rights: marriage is a disposition of two persons, religion only stamps their entry into religious society as the state stamps their entry into civil society. The moral spirit it is which gives value to Nature, which in itself is wholly the play of accident without an end of its own. It creates out of Nature a Cosmos, a world of humanity. This intelligible world contains not only the good will but Truth and Beauty as well, which the Good draws up to its own height. For Science and Art alike are the creation of the Reason, but they are still separated from their creator; whereas a man *is* his will, and in virtue of this identity he gives his knowledge the mark of Truth, and that which pleases him the qualification of Beauty. The truth then of Science, Art, and Action, is given in the human spirit, which itself without time or space posits its sensation in definite time and space. This objective spirit is the medium of the individual subjects, in which they communicate as by speech. It is the sum and system of subjective minds, at once their creation and superior to them. So far as I understand Prof. Steinthal, he seems in his distinction of subjective and objective not to mark clearly two different meanings of objective,—(1) that which is outside a subject, for example a word uttered, which Prof. Steinthal does not consider objective (p. 421), and (2) that which is communicable from one mind to another like a language, or a true thought. The latter is, I suppose, the sense he intends. He shows further the historical character of this objective spirit, and how in individual nations it gathers into separate Ideas or ideals, ways of thinking or dispositions of character. It lifts the individual who breathes in it out of a purely natural state into an ideal character *(ideell)*. This spirit exists only in and through the individuals, on whom is therefore imposed the duty of assimilation to the total order.

On this depends the notion of Duty: it is the intelligible character of man to perfect himself into the ideal reality which he acquires as moving freely in this atmosphere (p. 438). From this root spring the particular duties: (1) self-respect with humility, (2) self-maintenance and self-devotion, (3) self-regard and regard for the community. This relation is otherwise expressed as the relation of the *I* and the *We*. The *I* is the individual bearer of the objective spirit represented by *We*. In this sense of the *Ego*, it is the character as expressing the *power* of ethical rules.

Without detailed inquiry, we may raise some questions upon Prof. Steinthal's general theory of morality. The "formal feelings" are a kind of "moral sense" only divested of the adventitious and arbitrary character of the moral sense, and objective, both as constituting their object and as universal. There can be no doubt there is a certain feeling of "satisfaction or dissatisfaction" (p. 48), connected with the unity of a moral act—the feeling of approbation or the reverse: but is this a sufficient account of the nature of moral judgments? In the first place, similar feelings are present in logical judgments, and may be called a formal feeling of truth (cp. Wundt, *Phys. Psych.*, ii. 347). Prof. Steinthal denies this (p. 40). He speaks of such feelings arising at the hearing of an unproved proposition, or of a given proof, but regards them merely as a kind of scientific tact. But, it may be urged, the "logical feeling" also exists as a kind of object-making feeling, a sense of logical propriety which almost impels the mind to take the next step in discovery, and such an intellectual sense is behind most theories of the development of ideas. And again is it not a moral "tact" which is also the guide in ordinary judgments of actions? Prof. Steinthal's view of the relation of moral and logical judgment (*Beurtheilung*) is indeed very difficult to apprehend precisely; for instance, the latter (*i.e.*, the answer to the question, Is a cognition true?) is distinguished from the former or from æsthetic judgment, as being without feeling (p. 39). But in Part iv. correct knowledge is declared to be *true* when it is the product of the moral impulse, and therefore would seem to be connected with a formal feeling (p. 412). Unless we are willing also to regard logical judgment as identical with logical sense, the theory of formal feeling hardly shows us more than that moral relations appear in feeling as a sense of satisfaction.

The greatest difficulty in Prof. Steinthal's theory is in his apparent separation of the moral character of actions, and therefore of the formal feeling, from the "pathological feelings". The moral relations or Ideas thus become formal and abstract: they seem to be something besides the other relations between the elements of action. Now the beauty of a statue cannot be a mere relation of form, but implies a sensuous vehicle of the form, and the beauty is not imposed upon this (as we gather from p. 435), but

grows out of it by organisation of its parts. In the same way moral relations grow out of ordinary feelings by refinement of them. The feelings or impulses or volitions become limited and modified so as, in their connexion, to constitute the human end. And the truth contained in the notion of "formal feelings" seems to me to be this, that in each new trial as to what the end is, or where perfection lies, the test is a feeling that the act really does further development, a feeling therefore of satisfaction. The moral relations are not over and above the actual relations of will, but give value to them because contained in them. Throughout the abstracter parts of Prof. Steinthal's work his reverence for Kant induces him to speak of morality as something which indeed gives value and character to feelings, but yet itself derives no value from them. This dualism is often suppressed, and it is because the separation of Ideas from Feelings is not made there, that the Second Part is so instructive. (The difficulty reappears in his purely metaphysical doctrine in Part iv. On p. 408 perception as a chaos is contrasted with conception and law, and on p. 396 thing, quality, &c., are described as *only* ideas, whereas on p. 409 it is implied that even sensible knowledge is rational. These two views are never reconciled.)

This separation creates many difficulties. It is not easy to see in the first place whether the object of the formal feeling is the Idea itself or the Idea as modified by its peculiar psychological surroundings. The description of the Ideas as *categories* of formal feeling implies the latter, but if the feeling apprehends pure relations there seems no room left for modifications, which however appear to be assumed by Herbart.[1] The effect of the separation is most apparent in the psychological theory of action, where the group of ethical ideas is distinct from other groups of ideas suggested by ordinary feelings. Here the Ideas, which are intelligible, are themselves ideas (*Vorstellungen*) and therefore have force (*Kraft*) by which they act upon other ideas and dominate them. But the ethical group does not exist apart from the latter but in them: we do not have first a feeling, then an idea of right, and then a right feeling, but the feeling is itself right in being of a certain quality or degree. In Prof. Steinthal's psychological view, moreover, the distinction of *Macht* and *Kraft* disappears, for the Ideas seem to have *Macht* only so far as the ethical group has superior *Kraft*, so that the *Macht* seems useless except so far as it can translate itself into *Kraft*. 'Authority,' to use Butler's word, was described (Part i.) as greater the less force it needed to use, that is, the less antagonism there was to overcome; but in the psychological explanation this is seen to be really the dominance of the ethical ideas, and therefore the *relative* expendi-

[1] *Allgemeine Praktische Philosophie*, p. 28. Herbart however regards them (with doubtful justice) as merely differences of degree: he speaks of "*mehr oder weniger stark ausgeprägte Nachbildungen der Ideen*".

ture of force is the greater. The distinction is in fact only valid if used to indicate that there is a difference in kind between an impulse as moral and impulses not moral, though the *intensity* of feeling which gathers round the former may be in a case of good action the smaller. And this is the way Butler represented the case, though he did not perceive any of the psychological questions it raised.

We may return to Part ii., which treats of the "Forms of Moral Life," that is to say, the institutions in which the Moral Ideas are centred. They form the objective world, the medium in which the moral individual lives. The value of this very interesting Part is that it enforces in detail the intelligible character, or what, in spite of the slight flavour of unction in the word, we may call the spiritual character of the ordinary facts of life. This is a way of thinking more or less traditional in Germany, but needing strong enforcement at the present day, when the distinctive features of moral life are in danger of being confused with their natural history. Beginning with the Family or Marriage, Prof. Steinthal goes on to take one by one the different elements in the development of society—science, art, religion, commerce, and finally the state itself, the rights of citizens and the right of property. The discussion of commerce, though somewhat long, is very instructive. Prof. Steinthal shows that, though commerce rests upon egoism, the desire of self-preservation, it is in fact in the highest sense a moral activity, implying trust and public spirit (pp. 206 ff.). In his view of the state he follows Wilhelm von Humboldt, and is determined by strong antagonism to the popular German idea of a 'Cultur-Staat' (p. 239), or state which regulates the relations which are usually regarded as the affair of society. It is impossible to get quite a consistent view of the state from Prof. Steinthal: at one time it seems to be a means to a special end, the protection of rights, standing above other unions in the society only on account of its end (p. 235); here it is identified with the government. At another time it is declared equivalent to society in general regarded as watching over rights and duties; here the state, though still including only government and police, is still regarded as the whole society performing a certain function, and differs from the idea of the 'Cultur-Staat' only in the limits assigned to the functions. The value of Prof. Steinthal's discussion is a practical one, that the state should not convert into legal rights things which are much better left to the free action of individuals, and this needs saying in Germany. We may shortly refer to a number of topics which are treated suggestively and always in a liberal spirit—the need of greater freedom of teaching (in Germany) (p. 205), the relation of the schools to religion (p. 203), the right of atheism to be regarded as one form of religion (p. 226), the duty of taking an oath when prescribed by the state (p. 250)—Mr. Bradlaugh may have seen Prof. Steinthal's book between this

Parliament and the last—and finally, the institution of property, in which he is willing that great changes should take place. Property he regards, with Herbart, as a trust left to the individual by society, just as society *leaves* a man his own children. An excursus is appended on Socialism, which Prof. Steinthal thinks necessary in some form or other in order to dispose of the setting a *price* on a man's labour: a man has *value* (*Werth*) which cannot be represented in money, but can only be acknowledged or esteemed. His socialism seems to be the rule 'To every one according to his needs'. But he will not hear of state-socialism: socialism must be the outcome of our associated life; the state must in fact vanish, and society take its place (where again the state appears equivalent to mere government). And he is equally certain that socialism must come not by annihilation of existing morality, but by the "gentle course of history," and it will require a change not in one country only but in all (p. 276).

Many other special parts of the book might be made subject of notice—*e.g.*, the treatment of Right in distinction from Morality under the head of the Idea of Right (Part i.) or the analysis of Imitation (pp. 325 ff.) in the psychological part, most of which requires for appreciation reference to the *Abriss der Sprachwissenschaft*. The advisability of calling a child's action in sucking a reflex (p. 322) is very questionable (cp. Wundt, p. 412).

The chief value of the book, then, taking it as a whole, lies in Prof. Steinthal's insistence on the spiritual character of morality, though how the spirit itself arises in his system it is not easy to discover from the *Ethics* itself. Quite apart from the defect of formality in the treatment, the intelligible character of moral actions is a truth which is always being forgotten, because morality so palpably implies events. And this truth leads on to what must be considered another truth, the conception of the objective spirit. The value of these truths is not diminished by their not being original: in particular, can this objective spirit be distinguished from the Absolute Spirit (rejected by Prof. Steinthal) as it is understood by those theories which conceive it most philosophically? With them it has national characters and historical development, and the conception of humanity is regarded (*e.g.*, by Prof. Green) as meaningless except as exhibited in individuals and societies.

S. ALEXANDER.

VIII.—NEW BOOKS.

[*These Notes (by various hands) do not exclude Critical Notices later on.*]

The Politics of Aristotle. Translated into English, with Introduction, Marginal Analysis, Essays, Notes and Indices, by B. JOWETT, M.A., Master of Balliol College, Regius Professor of Greek in the University of Oxford. Vols. I., II. 1. Oxford: Clarendon Press, 1885. Pp. cxlv., 302, 320.

Since these volumes were first mentioned in MIND 41, a careful perusal of them makes it evident that matter for discussion must be looked for rather in the 'Essays' promised as the concluding part of vol. ii. than in the present instalment of the work. The character of the Translation (in vol. i.) and the scholarship of the Notes (which make up the present part of vol. ii.) are, of course, not subjects for a philosophical journal. Apart from them, the Preface and the Introduction (pp. i.-cxlv.) are all that there is to review; and here the main questions of the *Politics* and others connected with them are constantly relegated for examination to the forthcoming 'Essays' (cp. xii., xxii., xxix., &c.). For the publication, then, of the 'Essays' we must wait in order to estimate the whole work as a contribution to political philosophy; but hints as to their matter and manner may perhaps be gathered from the remarks which, in the Introduction, enliven or illustrate the Analysis of Aristotle's text. Short, and—with few exceptions—simply put, these *sententiolæ* recognise and meet the difficulty of bringing home everyday truths and generally-accepted experiences to the average university-student. That "property has duties as well as rights" (cxiii.); that "great offices of state should have each their own sphere divided according to the subjects with which government is concerned" (cxvii.); that "we ourselves are not aware how much in all mental investigations we are under the influence of language and of crude ideas inherited from the ancients" (cxxxiv.);—these, and apophthegms like these, constituting perhaps a third of the Introduction, derive from their position a peculiar force which might be lost in a different form of publication. It is promised that the 'Essays' shall also deal with the life and some aspects of the general philosophical work of Aristotle.

[A. G.]

The Principles of Sociology. By HERBERT SPENCER. Vol. I. Third Edition—revised and enlarged. London: Williams & Norgate, 1885. Pp. xii., 883.

In this third edition of a volume which has formerly received detailed notice in MIND (Vols. i. 128, ii. 141), although, by careful revision of every chapter, the text (now 761 pp.) has been reduced to the extent of forty pages, the bulk of the volume has not been diminished but rather materially increased. Important additions have been made, first, to Appendix A ("Further Illustrations of Primitive Thought"), "such as practically to constitute it a second demonstration of the thesis demonstrated in Part i.". This Appendix (pp. 765-817) has been increased to three times its original size (in the first edition). To the fifteen numbered paragraphs of Appendix B, on "The Mythological Theory" (pp. 818-829) a section has been prefixed giving an outline of the argument which follows,—to the effect that the theory of a primitive worship of heaven as

symbolising the infinite, afterwards passing into Nature-worship, is supported neither by inductive (archæological) nor by deductive (psychological) evidence, but is a foregone conclusion, theologically, and not scientifically, determined. Appendix C, on "The Linguistic Method of the Mythologists" (pp. 830-837), is new. Mr. Spencer here contends that the assumption of philologists "that there exists in all cases, or in nearly all cases, a rational root for a word" is rendered inadmissible by the knowledge that "at present there goes on what may be called by contrast an irrational genesis of words". In the absence of historical evidence of their origin in particular facts, entirely wrong etymologies (as is shown by illustrations) would seem plausible for words now in use. Similar formations cannot have been absent in primitive times; and there is no criterion by which one set of formations can be distinguished from the other. Those who advocate the mythological theory, for example, Prof. Max Müller, also set out with the postulate "that there were originally certain roots supernaturally given," and would, further, maintain "that mankind lost their original ability to frame abstract ideas and use the corresponding abstract words"; but this implies that the movement of thought is from abstract to concrete, or the reverse of that which it actually is. In the present edition, the means of verifying the statements contained in each paragraph (at first omitted for the sake of avoiding foot-notes) is provided in a section of "References" (pp. 839-68) compiled according to the method that has been followed in all the later Parts (separately published) of the *Principles of Sociology*. While references have thus been supplied (with no ordinary labour, for which the author has to thank Mr. H. R. Tedder and the late Mr. P. R. Smith), slight errors have also been removed in the quotations originally taken from *Descriptive Sociology*, "which, though not diminishing the value of the extracts as pieces of evidence, rendered them inexact". Lastly, a Subject-Index (pp. 869-83, due to Mr. F. H. Collins) has been added, greatly facilitating the use of a work so full of matter.

Lectures on Philosophy. First Series. By THOMAS MAGUIRE, Professor of Moral Philosophy; Fellow and Tutor, Trinity College, Dublin. London: Kegan Paul, Trench, 1885. Pp. 263.

These racy Lectures—"all grounded on the fact familiar to anyone that understands Plato or Hegel, that all knowledge involves two opposite elements, never separate and always distinct"—were, we believe, published last autumn, but have only now come to hand. They might have come sooner, occupied as some of them are so directly with the work of writers in MIND. When it it said that "they are intended for students in Logics and Ethics in Trinity College," the meaning appears to be that they have been delivered to that auditory, but under what circumstances and with what continuity (or discontinuity) is less apparent. The first of them, on "Some Facts of Perception and their Significance," reads like the inaugural lecture which it will have fallen to Prof. Maguire to deliver when he assumed his chair some years ago; but a whole year seems to have passed before it was followed by the next, on "The Will: in reference to Dr. Maudsley's *Body and Will*". The others,—on "Materialism," "Ethics founded on End" (Aristotle, Butler), "Transition from Ancient to Modern Philosophy" (Schoolmen, Descartes, Leibniz), "Kant"—may have followed at any time in the interval till last year, when Prof. Webb and a number of writers in this Journal or other periodicals gave identifiable occasion for the remaining five lectures (one of these, however, being no more than a note of three pages on Mill's Nameable Things, designed to show that the *Daily Telegraph* was not justified in saying, at some time or other, that Mill was a man whom Plato would have called *σοφός*). It is plain that the

Dublin students are kept, if somewhat irregularly, in pretty close touch with the world outside, and nothing could surpass the liveliness of their teacher's manner as he darts from topic to topic over the whole field of philosophic interest. As he says, with perfect truth, of our contributor, Prof. W. James, he is himself, decidedly, "one of the few writers on metaphysics who is [are] not lugubrious". If there is one point more than another which he is concerned to impress, it is the difference between philosophy and psychology: and this it is that more especially gives him occasion to direct his running fire of criticism upon various writers in MIND. It is rather apt to miss its mark from a disinclination or a sort of inability in the critic to fancy that others, from their own point of view, may be just as concerned as himself to establish the distinction. More than once, he gets such comfort from a certain editorial confession (as he takes it) of psychological collapse, that one is almost sorry to have to ask him to note that it was psychologists, not psychology, over whose shortcoming there was a regretful sigh vented in these pages some two or three years ago.

Psychology. Three Volumes by ANTONIO ROSMINI SERBATI. Vol. II. London: Kegan Paul, Trench, 1885. Pp. xv., 632.

In this second volume of his *Psychology*, although scholastic distinctions are still very prominent, Rosmini comes more into contact with modern thought than in the former volume, noticed in MIND, Vol. x. 139. He points this out himself, remarking that questions as to the essence of the soul, which were the subject of vol. i., were the first to be asked and belong to the earlier period of philosophy, while questions as to its development, its "becoming," were asked later, because men had grown tired of discussing the greater questions. When questions about "essences" are neglected, as in the last century, philosophy becomes superficial; but now the period of "philosophical superficiality," of "materiality and sensism," is passing, and it is possible to restore the older truths.

Thus in the former volume, as the author tells us, he had to be occupied with what is "almost entirely forgotten in ordinary treatises, refashioning and restoring it in such a way as (we trust) will not offend the taste of our contemporaries". This second volume deals with (1) the "acts, powers, functions, habits," that "issue from the essence" of the soul; (2) the laws of its "continual production and operation". An important place is taken in Rosmini's psychology by the distinction between direct perception and reflective consciousness. This is connected with his metaphysical doctrine of "being". Reflection is defined as "the faculty of applying the idea of being to our cognitions and their objects". The idea of being, as is seen especially in book iv. of the present volume, is derived from the fragments of the Eleatic philosophy; the difference, as Rosmini explains it, is that in opposition to the pantheism of that philosophy he maintains the real individuality of being. Ethical as well as psychological application is made of this idea, and is closely connected with its psychological development. "The supreme law of the practical reason" is declared to be "Recognise being,". For "if the law of the theoretic reason says: 'Being is the object of knowing,' the law of the practical reason says: 'Being ought to be the object of practical knowing'". The distinction made between the theoretic and the practical reason, or "rational principle in action," is not to be confounded with Kant's distinction, "who divided the theoretic and the practical reason into two faculties radically different". The practical reason is directed by a "cosmological law of harmony". "Divine Wisdom has placed order in the world. But this order is not in and through the world apart from spirit. On the contrary, it is by an order existing in and through spirit that the external world receives that substantial completion

that turns it from non-being into being. Order, therefore, in the world apart from spirit is not yet order, but is merely a rudiment of the order that is afterwards found in the world as existent in spirit. Hence the cosmological law of harmony must be followed by the psychological law which completes it: they are two parts of the same law, two real relations in which the same object is considered" (p. 597).

Scientific Theism. (Organic Scientific Philosophy.) By FRANCIS ELLINGWOOD ABBOTT, Ph.D. London: Macmillan, 1885; Boston: Little, Brown, 1885. Pp. xxiii., 219.

In this volume, published simultaneously in England and America, the author presents "a *résumé* of a small portion of a comprehensive philosophical system," of the nature of which some indication was given in his article on "Scientific Philosophy," MIND, vii. 461, here republished as an Introduction (pp. 1-56). The novelty of the book, he says, "lies in its acceptance, on the warrant of modern science and the scientific method, of the fact that we *do know* the objective relations of things, and in its attempt to develop the necessary philosophical implications and consequences of this fact, which phenomenistic modern philosophy steadily denies". The outcome of a scientific philosophy, occupying "the old Greek ground of the objectivity of relations" abandoned by mediæval Nominalism and its successor "Kantian *Apriorismus*," is "Teleology conjoined with Monism," which "yields the organic theory of evolution, or Scientific Theism," to be distinguished alike from the mechanical Deism that denies the immanence of God, and from the Pantheism that denies "all real personality whether finite or infinite". Critical Notice will follow.

(1) *Locke's Theory of Knowledge, with a Notice of Berkeley.* (2) *Agnosticism of Hume and Huxley, with a Notice of the Scottish School.* ("Philosophic Series," V., VI.). By JAMES M'COSH, D.D., &c., President of Princeton College. Edinburgh: T. & T. Clark, 1886. Pp. 77, 70.

These two numbers of the historical part of Dr. M'Cosh's Series are intended to lead to the conclusion that the natural realism of the Scottish school is the only means of escape from the consequences of Locke's theory of knowledge as historically developed first into the idealism of Berkeley and then into the scepticism of Hume and the agnosticism of Prof. Huxley. Kant (who is examined specially in No. vii. of the Series,—See MIND, Vol. x. 468) by his manner of meeting Hume has "opened the way for a more widespread and devouring infidelity than Hume's direct attacks ever did". The only effective way of meeting the idealistic and sceptical consequences of the one-sided development of Locke is to point out that "just as by the internal sense we know mind, so by the external sense we know matter" (No. v., p. 67), and, that "what we perceive originally are things, and what we perceive by the faculty that discovers relations are relations of things" (No. vi., p. 46). To the accounts of their philosophy are prefixed short sketches of the lives of Locke, Berkeley, Hume and Reid.

Proceedings of the Society for Psychical Research. Part IX. London: Trübner, 1885. Pp. 201-500.

In the present Part of these *Proceedings*, 200 pages are filled with a "Report on Phenomena connected with Theosophy," including from p. 207 to p. 380 an "Account of Personal Investigations in India and Discussion of the Authorship of the 'Koot Hoomi' Letters (with Appendices)," by Mr. Richard Hodgson. Nothing, apparently, could be more exhaustive (over-exhaustive?) than Mr. Hodgson's exposure of the arts of Madame Blavatsky and her confederates of the 'Theosophic' or 'Esoteric Bud-

dhist' persuasion. As some of the productions of the sect have been mentioned in recent Nos. of MIND, the concluding words of the Committee's Report regarding its foundress should be quoted: "We regard her neither as the mouthpiece of hidden seers nor as a mere vulgar adventuress; we think that she has achieved a title to permanent remembrance as one of the most accomplished, ingenious and interesting impostors in history". "Some Higher Aspects of Mesmerism" (pp. 401-24) by Messrs. Gurney and Myers, and "Further Report on Experiments in Thought-transference" by Mr. M. Guthrie (pp. 425-53), are the other chief contents.

Insomnia; and Other Disorders of Sleep. By HENRY M. LYMAN, A.M., M.D., Professor of Physiology and of Diseases of the Nervous System in Rush Medical College, &c., Chicago, Ill. Chicago: W. T. Keener; London: Trübner, 1885. Pp. x., 239.

The properly medical part of this work consists of three chapters (pp. 38-115), which strike the lay reader as at once comprehensive and thoroughly practical. They are preceded by a chapter (pp. 1-37) on "The Nature and Cause of Sleep," and followed by three others (pp. 116-229) on "Dreams," "Somnambulism," "Hypnotism". In the first, the author gives a very good and effective summary of the latest physiological speculation on the cause of sleep, agreeing himself with those who regard the notable changes of blood-pressure and circulation that take place as of secondary rather than primary import. "The cause of sleep must be sought in the molecular structure [condition] of the brain, rather than in fluctuations of the blood-current. In the present state of our knowledge it must be negatively represented [with Pflüger] as the consequence of a deficiency of the amount of movable oxygen in the nervous tissue." The concluding chapters give, partly from the author's personal and professional experience, partly by collation of the recent work of others, an interesting and instructive view of subjects that are now engaging the attention of many inquirers. The author brings so much good sense and sharp insight to bear upon most of the facts with which he deals, that he might have been expected to be a little more suspicious as to some other reports quoted and as to the possibilities of nature in connexion with them.

Esquisse d'une Classification systématique des Doctrines philosophiques. Par CH. RENOUVIER. 2 Vols. Paris: Au Bureau de la *Critique philosophique*, 1885, 1886. Pp. 490, 420.

In this new work M. Renouvier seeks to base his philosophical system on the historical study of doctrines. His method of study is to describe successively the positions taken up by each thinker in relation to the chief antinomies of philosophy. The oppositions that are made the ground of this classification of doctrines are these:—Thing, Idea; Infinite, Finite; Evolution, Creation; Necessity, Liberty; Happiness, Duty; Evidence, Belief. After treating these antinomies historically in six Parts, which fill the whole of vol. i., and pp. 1-126 of vol. ii., the author goes on to establish his conclusions; the assumption being that in each antinomy either the thesis or the antithesis (once rationally stated) must be true. Critical Notice will follow.

Études physiologiques et psychologiques sur le Somnambulisme provoqué. Par H. BEAUNIS, Professeur de Physiologie à la Faculté de Médecine de Nancy. Avec 4 Figures intercalées dans le Texte. Paris: J. B. Baillière et Fils, 1886. Pp. 106.

These studies on hypnotism, in part physiological (pp. 1-47), in part psychological (pp. 48-99), are not intended to lead up to any positive con-

clusion, but to prepare the way by experiment and analysis for a synthesis which the author regards as impracticable till more is known of the functions of the brain and of the physiology of natural sleep. The aptitude to carry out suggestions which characterises the hypnotic state results, he thinks, from a kind of "cerebral shock". He does not deny that communication of thought may take place without physical signs, but has not observed any case of it in his own experience.

La Psychologie du Raisonnement. Recherches expérimentales par l'Hypnotisme. Par ALFRED BINET. Paris: F. Alcan, 1886. Pp. 171.

The object of this book, by an author who is well known to the readers of MIND, is to arrive at a psychological theory of reasoning; this being, as Wundt has contended, the fundamental form of psychical activity, from which all other forms, such as memory and imagination, have sprung and to which they may be reduced. The act of perception, on grounds afterwards more fully explained, is selected at the beginning for special study. It is found that what takes place in perception exactly resembles syllogising. Psychologically, both processes consist in an "organisation of images," determined by the properties of the images alone, taking place necessarily when these are brought together, and the same whether the process is conscious, as in the developed form of reasoning, or unconscious, as in the formation of percepts. In this process there are always three terms:—(1) a present image or sensation which becomes "fused" with (2) an image that resembles it, and (3) an image associated with the second by similarity or contiguity, which in the percept or the conclusion of the syllogism becomes attached to the sensation or first image (or rather to the product of the "fusion" of this with the second). The psychological nature of the process could not have been detected by study of the syllogism alone, but only by observing it in the percept, where the images are not yet obscured. This is why the percept was selected as the object of study. But further, to discover the exact character of the organisation of images in normal perception, it was necessary to have some method of exaggerating the elements and observing them in isolation. This has been found in the study of illusions and hallucinations, especially the artificially produced hallucinations of hypnotism. Between these hallucinations and normal perception there is a whole series of intermediate states. Ordinary illusion, hypnotic illusion, and hypnotic hallucination are more and more accentuated distortions of perception. As in perception there is always an element of imagery, so in the most exaggerated forms of hallucination there is always an element of sensation. M. Binet describes this as the "point de repère". Imagery is the same in character throughout, consisting of copies of sensations; is always cerebral; and is localised in the same part of the brain as the corresponding sensation. These conclusions are led up to by accounts of the different types of imagery in different persons ("the visual type," "the auditory type," "the motor type") and of "after-images," which are found to have both the positive and negative characters of the ordinary image, not of the sensation. As the elements of perception and hallucination are the same, so also the process is the same. The difference is that in normal perception, as in rightly constructed syllogism, there is correct judgment, while in illusion and hallucination there is sophism; but this is a logical, not a psychological distinction.

Philosophie du Droit civil. Par AD. FRANCK, Membre de l'Institut, Professeur au Collège de France. Paris: F. Alcan, 1886. Pp. vii., 295.

The author bases his "philosophy of civil law" on the ideas of "right"

and "duty" regarded as absolute and fundamental, and each containing the other. These two ideas suppose a third which is not less necessary, *viz.*, free-will (p. 4). All three may be established by simply considering the nature of "the human person". From consideration of the particular relations of the human person the following rights are found to belong to all men by the mere fact that they exist: the right to life, the right to individual liberty, the right of property, liberty of conscience, of thought and of speech. The fact that liberty is only possible in a social order determines the character of society and of positive legislation. Since marriage and the family are the basis of society, it is necessary first to discuss the form these ought to assume consistently with the admission of equal personal rights. This discussion occupies about a third of the book. Then the author goes on to define the right of property, defending it against the arguments of Proudhon. After discussing intellectual property, he proceeds to the discussion of questions of liberty and tolerance; returning finally to property in an appendix on M. Fouillée's work *La Propriété sociale et la Démocratie.*

La Philosophie des Médecins Grecs. Par EMMANUEL CHAUVET, Professeur à la Faculté des Lettres de Caen. Paris: E. Thorin, 1886. Pp. lxxxix., 604.

In his introductory historical sketch (pp. ix.-lxxxix.) the author shows that as Greek philosophy from the beginning to the end allied itself with medicine, adopting medical theories from the physicians and developing them on its own account, so, on the other hand, medicine allied itself with philosophy, each medical school having a complete philosophy of its own, partly taken from the philosophers and partly developed independently to suit the needs of medical science and practice. The object of the book is to set forth as completely as possible the philosophy of the physicians—both their general philosophical theories and those that specially concern the medical and biological sciences. It is pointed out that the historian has to confine himself practically to Hippocrates and Galen; and accordingly the body of the work falls into two portions, the first of which (pp. 1-99), under the main heads of "Logic," "Morals," and "Physics," deals with all the writings attributed to Hippocrates, the second (pp. 101-583) with Galen, "Physics" being here divided into "Psychology" (pp. 284-486) and "Theology" (Galen's cosmology being omitted). Sections are appended on "Origins of the Philosophy of Hippocrates" (pp. 94-9), "Galen, Historian of Philosophy" (pp. 519-75), and "Origins of the Philosophy of Galen" (pp. 576-83). The general results of the author's investigation are summed up in the "Conclusion" (pp. 584-601). The real additions made by medicine to the ideas current in the philosophical schools are found to be chiefly, or even exclusively, in psychology. As regards the question of the seat of the soul, medicine was able to correct philosophy; and Erasistratus,—whose view was too lightly rejected by Galen,—had even arrived at the idea of cerebral localisation. The physicians added to the five senses "internal sensibility," totally neglected by the philosophers, and revolutionised the theory of the senses by assigning sensibility to the nerves. Galen assigned correctly the functions of the motor nerves and the muscles; with him "physiological determinism" appears for the first time in history; and although the treatment of the psychology of sleep and dreams by the physicians was on the whole inferior to its treatment by the philosophers, Galen was able to correct Aristotle by showing that the motor faculty is not entirely abolished in dreams. In dealing with such subjects as mental "habit" and "disease," the physicians are again superior to the philosophers.

Opere Filosofiche di ROBERTO ARDIGÒ. I. *Pietro Pomponazzi. La Psicologia come Scienza positiva.* II. *La Formazione naturale nel Fatto del Sistema solare. L'Inconoscibile di H. Spencer e il Positivismo. La Religione di T. Mamiani. Lo Studio della Storia della Filosofia.* III. *La Morale dei Positivisti. Relatività della Logica umana. La Coscienza vecchia e le Idee nuove. Empirismo e Scienza.* Vol. I., Mantova: L. Colli, 1882; Vols. II., III., Padova: A. Draghi, 1884, 1885. Pp. 435, 454, 455.

These are three volumes of the collected works of one of the most distinguished representatives of scientific philosophy in Italy. The work by which the author is best known, *Psychology as positive Science*, first published in 1870, makes up the greater part of vol. i. It is preceded by a Discourse on "Pietro Pomponazzi" (i., pp. 1-52), delivered at Mantua, March, 1869, and followed by other writings published at various dates since then, of which the most extensive are those on the formation of the solar system (vol. ii.) and on the Ethics of Positivism (vol. iii.). Three more volumes are yet to appear. The present edition is not a mere reprint, the author having filled up some lacunæ of former editions and retouched the expression in parts. His philosophical system, as he tells us, was formed as a whole before he began to publish; and more by direct study of science than by the influence of modern philosophic writers such as Comte, Mill and Spencer; with "the older metaphysicians" he was familiar before beginning his scientific studies. The most prominent difference of his Positivism from the Positivism of Comte is the importance he gives to subjective analysis. As aids and instruments of psychology, every possible use is to be made of physiology, archæology, linguistic science, &c.; but it is never to be forgotten that psychology is an independent science, distinct from all other sciences, and particularly from physiology. To think, as many do, that the science of the life of thought must henceforth leave the field to the science of the life of organs, is an error that does not deserve even to be combated (i. 172). For the physiology itself of the nervous system to make progress, the aid of psychology is necessary. The physiologist who is without knowledge of psychology "believes with the vulgar that the acts which are ascribed to the so-called faculties are simple, and those of the one totally diverse from those of the other, and goes in search of the corresponding organs". Mental facts,—from which, and not from "faculties," we must set out,—can all be reduced to sensations and their elements, combined in various ways according to the laws of association. The positive study of mental facts enables us to pass beyond not only the "faculties" but even the abstractions of "matter" and "spirit," and to attain to the conception of a "psychophysical reality or substance". The external states of which this conception asserts the parallelism with internal states are not to be regarded as extra-mental states "mysteriously" connected with the terms of a subjective process; since ultimately even extension can be resolved into data of sensation, just as much as sounds and colours. It is therefore a mere illusion that makes the relation of body and mind seem an insoluble problem; the illusion, namely, of regarding the distinction of subject and object as primitive when it is only a distinction of two orders of mental facts. The "datum of sensation" is anterior to the distinction of *Ego* and *Non-ego*, and may come to be referred by the mechanism of cognition to either term of the contrast. This datum is best described as "psychophysical" because, although the material world is in ultimate analysis mental, it is not "subjective" in the narrower sense that seems to be implied in the statements of idealists, but is "primitively indifferent". The author arrives by this mode of consideration at what he correctly describes as the "ontological" doctrine that "in the world of spirit the sensation, as real and true datum, has the same

absolute indestructibility as the atom in the material world" (i. 240). The distinctive character of his position is, however, occasionally obscured by his repudiation, in the ordinary language of Positivism, of all "metaphysics" and "search for essences and causes". His general philosophical doctrine is that "facts," material and spiritual, which, as we have seen, are all, in ultimate analysis, mental phenomena, resolvable into sensations and elements of sensation, are the reality; and that, in all propositions about this reality, the truth is in "the particular," in sensation and its elements, not in the mere form of association or mental construction. This Positivism differs from the incomplete Positivism of Hume in getting rid of the ultimate doubt and the falling back on a blind "instinct of nature"; for it affirms not only that phenomena are all that we can know, but that they are reality itself. Of this kind is the Positivism of the Italian philosophers of the Renaissance, especially of Pomponazzi, the earliest of them, who constantly appeals to experimental verification, and in one place declares that "sense and experiment are the balance of truth". To Galileo belongs "the title of father of Positivism, not only in the physical sciences but also in the philosophical sciences properly so called" (ii. 436). Positive philosophy represents the true direction of Italian thought, destined, it is hoped, to resume its course as growing national life gains the victory over foreign and mediæval influences. In its application to ethics, Positivism continues the Greek tradition. Its morality is social, like that of Aristotle, not individualistic, like that of Scholasticism, which at last found its most rigorous expression in Kant (iii. 165).

La Dottrina dello Stato di G. G. F. Hegel e le altre Dottrine intorno allo stesso Argomento. Studio comparativo del Dr. GIUSEPPE LEVI, Professore di Filosofia del Diritto nella R. Università di Catania. Vol. I. (i. "Preliminari," ii. "Esposizione interpretativa della Dottrina di Hegel"). Vol. II. (iii. "La Dottrina dello Stato nei Libri di Platone e di Aristotele e la sua Comparazione con la Dottrina di Hegel"). Roma: E. Loescher, 1884. Pp. 127, 257; viii., 434.

These two volumes bring together three successive parts (first published in 1880, 1881 and 1884 respectively) of a work which is not yet finished, but which has now a certain completeness as far as it goes. The author has, so far, expounded Hegel's doctrine of the State and compared it with those of Plato and Aristotle; in future instalments he proposes to compare it in detail with the doctrines of modern philosophers. Part i. is a preliminary statement of the general principles of Hegel's philosophy (with special reference to his doctrine of the State) and a defence against objections; Part ii. contains the doctrine of the State itself; Part iii. begins with an exposition of the corresponding doctrines of Plato and Aristotle, and then proceeds to a comparison of Hegel's doctrine with theirs. The comparison is made (1) in regard to the conception of the State as "organism" (not "mechanism"), (2) in regard to the character of this conception as "concrete" (not "abstract"), (3) in regard to its character as "statual" (not "individualist"), in all of which points there is agreement between the doctrines of all three philosophers. Hegel's doctrine is found to be in each respect superior to that of the Greeks. In the first place the State is no longer conceived as a merely "natural" organism analogous to a plant or animal, but as a "spiritual" or "ethical" "organism of wills"; secondly, the ideal State is conceived not as artificially formed by legislation imposed as from without, and henceforth (having received perfect laws) as stationary, but as spontaneously formed by the wills of its members and constantly growing; lastly, the parts of the social organism are not conceived simply as members with functions in relation to the whole,

but as being at the same time ends for themselves. The superiority of Hegel's conception is due to the progress that has taken place in the passage from ancient to modern modes of practice and thought. Hegel has reconciled modern individualism, so far as it can justify itself, with that conception of the State as an organic whole which he was enabled, by his study of the Greeks, to recover for the modern world.

La nuova Biologia. Saggio storico-critico in servigio delle Scienze antropologiche e sociali. Per PIETRO SICILIANI, Professore Ordinario nella R. Università di Bologna. Con Tavole tassinomiche. ("Biblioteca Scientifica Internazionale.") Milano: Fratelli Dumolard, 1885. Pp. xxvi., 408.

The leading idea of this book is that the history of biology ought to be treated all along in relation to the history of general philosophical conceptions. The historical part (pt. i., pp. 1-208), is divided into an introduction (pp. 1-35) and four chapters treating successively of biology in classical antiquity, in the middle age, in the renaissance and modern times, and in the present century. The author finds that there are, in all, three philosophical directions, *viz.*, dogmatism (or "affirmation"), scepticism (or "negation"), and "critical positivism" (or "research"). It is to this last that the future belongs. As schools in philosophy by their conflicts have caused progress, which on the whole has been continuous, so also in biology. In the present century three biological schools have tended more and more to affirm themselves as distinct systems, and to pass into "metaphysics"; yet within each school there has been progress in scientific ideas. These schools are those of "creation" (represented by Cuvier), of "mechanical evolution" (represented by Haeckel), and of "teleological evolution" (represented by Schelling, Hegel, Hartmann, &c.). All schools (including the "Neo-Cuvierians") now accept evolution in some form, while the "mechanical" evolutionists (including even Haeckel) do not consistently maintain the materialistic metaphysics to which their system tends. To show how this progress has come about by the conflict of the three schools is the object of part ii. ("Critical Examination," pp. 211-408). We have learned, with regret, that the author died in December, at the age of 50.

Einleitung in die Psychologie als Wissenschaft. Von Dr. HEINRICH SPITTA, a. o. Professor der Philosophie an der Universität Tübingen. Freiburg i. B.: J. C. B. Mohr (Paul Siebeck), 1886. Pp. viii., 154.

The longest and most important chapter of this *Introduction to Psychology as Science* (c. iii.—numbered iv. in the Table of Contents—"Principle and Method of Psychology," pp. 37-129), begins with a defence of the method of "self-observation". It is shown that this method really consists in observation of facts of consciousness, not as present but as remembered. On analysing any remembered conscious process, we find in it unity of form, multiplicity of content, and determination in time and space. When by abstraction we take another step in analysis, when instead of attending to single isolated mental processes as they are revealed by memory, we attend to that which they have in common, "feeling" and "representation" are found to be the ultimate elements of all mental processes. Will is not entitled to an independent position, for it is a complex of representations and feelings. In conscious life not only is there change of representations and feelings, but there is determinate change, the laws of which are formulated as the "laws of association". To go beyond these laws we must substitute a synthetical method for the analytical method hitherto followed, and make a hypothetical construction. It is found that the

unity of consciousness requires us to assert—in psychology only as a "problematical conception"—the existence of the soul as "immaterial substance"; and this is the desired hypothesis. The central chapter is led up to by two others (divided into three in the Table of Contents) in which the position of psychology as "phenomenology of consciousness" is defined in relation to the three divisions of philosophy proper, *viz.*, (1) logic, (2) metaphysics (theoretical), (3) ethics (practical). Chapter iv. contains a scheme of classification of psychological phenomena; the ground of division being the relation of body and mind. From the point of view of this relation the soul is to be observed in three processes: (1) "receptive," (2) "reproductive," (3) "productive" or "creative". Chapter v. gives a short account of "the aids of psychology" (physiology, &c.). The author's leading philosophical positions, indicated in the two introductory chapters and in a digression of c. iii., are derived from Lotze.

Erfahrung und Denken. Kritische Grundlegung der Erkenntnistheorie. Von JOHANNES VOLKELT, Professor der Philosophie an der Universität zu Basel. Hamburg u. Leipzig: L. Voss, 1886. Pp. xvi., 556.

The author, whose criticism of Kant was noticed in MIND, Vol. v. 145, now goes on to lay the foundations of his positive theory of knowledge. Theory of knowledge is, for him, "in the strictest sense, the presuppositionless science". In Kant there is the presupposition that universal and necessary knowledge exists; and in contemporary theories of knowledge there are all kinds of concealed metaphysical, logical and psychological presuppositions, above all the presupposition that "there is no existence outside consciousness". The problem of theory of knowledge is first to find out whether there is any objectively valid truth at all. The starting-point, therefore, must be the doubt whether anything can be known beyond the states of the individual mind. Accordingly theory of knowledge is subjective; and with this subjective character is bound up its character as having no presuppositions. This means that it is a "theory of certitude". Objective truths (if such exist) must first of all present themselves in the form of subjective knowledge. Now among the states of which the mind has immediate (subjective) certainty, there are ultimate principles with objective reference. It is found that "the objectivity of knowledge," implied in these principles, "at bottom rests on a single principle, that of the Logical, or of thinking". "The thinking self-activity of consciousness," carrying with it the certainty of an objective—or, as the author would prefer to call it, "trans-subjective"—existence, is therefore the desired basis of universally valid truth. The book is divided into eight sections: (1) The scientific Necessity of Theory of Knowledge; (2) Pure Experience as Principle; (3) The Principle of logical Necessity in its universal Signification; (4) Knowledge as Co-operation of Experience and Thought; (5) The subjective Factors of Knowledge; (6) The Concept in its Significance for Knowledge; (7) The Kinds and Sources of the Uncertainty of Knowledge; (8) Concluding Considerations.

Die Ethik des Utilitarismus. Von EMIL KALER (aus Graz, Steiermark). Inaugural-Dissertation zur Erlangung der Doctorwürde, eingereicht bei der philosophischen Facultät der Universität Basel. Hamburg u. Leipzig: Leopold Voss, 1885. Pp. 78.

This doctoral thesis is divided into two Sections, the first dealing with "individualistic," the second with "social" Utilitarianism. From experience, the author contends, it is only possible to obtain a hypothetical, not a categorical imperative. The difficulty of having a purely formal

character, which is found in Kantian ethics, affects also the ethics of Utilitarianism; for the principle of eudæmonism, like the Kantian principle, can give morality no objective content. Social Utilitarianism is no more capable than individualistic Utilitarianism of proving the harmony of individual and social interests. With a doctrine founded on experience the conception of society must remain either the conception of a sum of individual interests or of an external authority. The unity of the individual and society which is required in order to establish universally valid moral principles can only exist *a priori*. Social life, therefore, and the impulse to seek happiness are only the conditions of the origin of morality, not the grounds of the principles of morals. Moral laws must have their roots in the rational nature of man, not so far as it is theoretical, but in its practical legislating activity (p. 73).

Anthropologische Studien. Von HERMANN SCHAAFFHAUSEN, Dr. Med. und Professor in Bonn. Bonn: A. Marcus, 1885. Pp. ix., 677.

The author has collected in this volume a variety of "anthropological studies" published in periodicals and the transactions of scientific societies during a period beginning with 1839, the date of his inaugural dissertation for the medical degree (*De vitæ viribus*), a translation of which heads the series. All the papers, however different their content, aim at showing the truth of "two views, first won in recent times," *viz.*, the doctrine of organic evolution and the doctrine that psychical evolution runs parallel with this. The author thinks, however, that it is a weakness of Darwinism, as ordinarily interpreted, to attach too little importance to the influence of external conditions, such as climate, in producing the races of mankind. "For the progress of mankind," he holds, "the struggle of races is almost a matter of indifference." Progress is due to the development of intellect and knowledge, not to a struggle for existence; and "man is not a child of nature, but a child of education" (p. 418).

Die Einleitung in die Philosophie vom Standpunkte der Geschichte der Philosophie. Von LUDWIG STRÜMPELL, Professor an der Universität zu Leipzig. Leipzig: G. Böhme, 1886. Pp. 484.

The result of the author's consideration of philosophy from the point of view of its history is that the three most influential directions of philosophical thought have always been Scepticism, Materialism and Pantheism (or, as it is now called, Monism). At the present time the first is only "a pseudo-philosophical tendency"; but towards the other two an Introduction to Philosophy must take up a definite attitude. The author defines his position "from an opposing standpoint" "in such a manner as he deems fitting in view of youthful thinkers". He holds firm to the principle that a conflict between theoretic knowledge on the one hand and ethical and religious truths on the other must always be decided in favour of the two last, because theoretic knowledge is always of problematical nature and of less value than ethical and religious knowledge (p. 5). The chief divisions of the work are (1) "The Questions and Problems, the Conception, Parts and Subdivision of the principal Directions of Philosophy" (pp. 10-74), (2) "The Directions of Theoretical Philosophy" (pp. 75-401), (3) "The Directions of Practical Philosophy" (pp. 402-467), (4) "Philosophy of Religion" (pp. 468-484).

Ueber die Lautgesetze. Gegen die Junggrammatiker. Von HUGO SCHUCHARDT. Berlin: R. Oppenheim, 1885. Pp. 39.

An argument against what appears to the author the too stringently scientific character claimed for laws of phonetic change by the younger

school of grammarians. The influence of arbitrary elements, such as conscious imitation, is sufficient, he contends, to deprive these laws of their universality; and if there is any phonetic law without exception, it is that every change of sound, in at least one of its phases, is sporadic. The assumption that phonetic laws have no exceptions, instead of being, as some have urged in its defence, a useful instrument of research, is really a hindrance, as diverting attention from the investigation of causes; for the laws of phonetic change in any case are only empirical laws.

Die Platonische Philosophie nach ihrem Wesen und ihren Schicksalen für Höhergebildete aller Stände dargestellt. Von Dr. G. P. WEYGOLDT, Kreis-Schulrat in Lörrach. Leipzig: O. Schulze, 1885. Pp. 256.

This book is intended as a popular account of the Platonic philosophy and its fortunes. A short sketch is first given of what is known of Plato's life; about a third of the book is devoted to the Platonic doctrine itself; in the rest the doctrines of the Old, the Middle and the New Academy and of Neo-Platonism, and the struggle of Neo-Platonism with Christianity, are described. The last chapter (pp. 243-254) briefly indicates the nature of Plato's influence in mediæval and modern times. The author contends that Neo-Platonism did not succumb to Christianity because of its ethical and religious weakness, but because early Christianity derived strength from the idea of social reform, while Platonism, both early and late, was the most aristocratic of all the philosophical systems of antiquity. On its religious side, Platonism had much in common with Christianity, and the mediæval hierarchy has considerable resemblance to the Platonic State. The fundamental weakness of Plato's doctrine is the separation of the ideal and sensible worlds. From this it derived a theological and anti-scientific direction and a tendency to pass into religious fanaticism. Plato's strongest point, the author thinks, was the stress he laid on complete education of the citizen, and above all of the statesman.

Aphorismen zur Lebensweisheit. Von ARTHUR SCHOPENHAUER. Separatausgabe aus *Parerga und Paralipomena.* 2 Bändchen. Leipzig: F. A. Brockhaus, 1886. Pp. xi., 137; xii., 144.

Ueber den Tod und sein Verhältniss zur Unzerstörbarkeit unsers Wesens an sich. Leben der Gattung. Erblichkeit der Eigenschaften. Von ARTHUR SCHOPENHAUER. Separatausgabe aus *Die Welt als Wille und Vorstellung.* Leipzig: F. A. Brockhaus, 1886. Pp. xiv., 119.

The first of these reprints (in two small volumes, taken from the *Parerga und Paralipomena*) is put forth by the editor, Herr Wilhelm Gwinner, not as containing Schopenhauer's characteristic doctrine, but as written from a point of view intermediate between his genuine ethical view and the view of ordinary practical life, and therefore well adapted to prepare for the reception of his philosophy readers who are as yet unfamiliar with it. While Schopenhauer's ultimate aim is to persuade men to renounce entirely the search for happiness, this part of his work assumes happiness as the end; the purpose being to show that at any rate it is not to be attained by pursuing external objects, but can only be found within. This position, once attained, makes accessible the higher point of view. The other volume is a reprint of chaps. 41-43 of *Die Welt als Wille und Vorstellung.* These chapters the editor has selected as the best introduction to Schopenhauer's real philosophy; of which he conceives the most important idea to be that of "the immortality of the race," for the sake of which the death of the individual is necessary, but in which all the real being of all men is preserved. In this idea he sees the indication of a point of view beyond Schopenhauer's own.

Ideale Fragen, in Reden und Vorträgen behandelt von Prof. Dr. M. LAZARUS. Dritte, durchgesehene Auflage. Leipzig: C. F. Winter, 1885. Pp. 414.

The aim of these essays (first published in 1878 and now appearing in a third edition), so far as they are philosophical, is, by bringing into view the conception of the whole and the ideal side of things, to do something towards counteracting the narrowing influence of scientific "division of labour," which the author finds to be the foundation of the chief characteristics, good and bad, of the spirit of the present time. All of them have been, at least in portions, delivered orally; the first being a discourse held at the unveiling of the monument of Herbart at Oldenburg on the centenary of his birth, 4th May, 1876. The remaining essays are (2) "A Psychological Glance into our Times," (3) "The Heart," (4) and (5) psychological studies of "Time" and "Conversation," (6) "Thoughts on Enlightenment". They are all excellent specimens of the author's psychological art and welcome pendants to the larger "monographs" of the *Leben der Seele*.

Gesammelte Schriften von A. SPIR. I., II. *Denken und Wirklichkeit.* III. *Schriften zur Moralphilosophie.* IV. *Schriften vermischten Inhalts.* Leipzig: J. G. Findel, 1884, 1885. Pp. 416, 322, 285, 226.

The second edition of the first two volumes of these *Collected Writings* was noticed in MIND, Vol. ii. 276. They now appear in a third edition, revised and in part rewritten, and take their place as the metaphysical basis of the author's moral and religious philosophy, set forth in vol. iii. The first part of vol. iv. consists of essays dealing with various aspects of the principles explained systematically in the other volumes; the latter part ("Vereinzelte Anschauungen und Gedanken," pp. 157-226) is a series of detached reflections. The author's metaphysical doctrine is, briefly, that since "the things of experience have no true being of their own," therefore "the true being of things lies outside experience". It has been the merit of experientialism, especially as carried out by Hume, to show that both inner and outer experience is illusory; that external things are not, as we take them to be, substances identical with themselves, but only our own impressions variously grouped; and that our impressions are a perpetual flux and our individuality a mere succession of states, not a permanent thing. The *a priori* school, on the other hand, has had the merit of seeing that there really is a "norm" to which the true being of things must be conformable. The norm, the fundamental law of thought, is that "every object is in its own being identical with itself". Since experience seems to correspond to this norm but does not, it must be described as "a systematically organised illusion". To escape, by means of intellectual insight, from this illusion is the aim of morality. The highest good for the "true self," which is outside the "individuality," is attainable by action in accordance with the "normal," as distinguished from the "empirical" nature; that is, by action according to a principle opposed to "natural egoism". The element of illusion and evil in the world, the "abnormal" character of the empirical nature of things, shows us that "the unconditioned," "the norm," which is at once "self-identical," as being conformable to the fundamental law of thought, and an ideal of moral perfection, cannot be the ground or cause of experience any more than it can be part of experience. The object of religion, therefore, ought not to be any power active in nature, but "the true, higher being of man himself as of all things," "not the Ruler, but the Ideal". "Belief in God is the condemnation of Nature, of common

reality." In all actual religions there is a mixture of elements; moral attributes being ascribed to an external power that claims obedience. They must therefore be regarded as compromises between the primitive religion, "the religion of fear," which had no ethical element, and the ideal religion, "the religion of love," in which the ethical element is supreme. Yet although ideal perfection cannot be affirmed of the ground of things,—evil being an integral part of the natural order and not a mere accident,—we are to see in "the Logos that acts and manifests itself in Nature" an effort, at first unconscious but finally attaining consciousness in man, towards the divine, the ideal. Evolution from lower to higher necessitates a teleological view according to which the process of things has an end,—the norm, the perfect, the unconditioned,—outside itself. The idea of such a teleology, from which all anthropomorphism shall be excluded, is developed in vol. ii., bk. 1, c. 10, and in an essay ("On the End of Nature") in vol. iv. The latter part of vol. iii. (pp. 195-385) contains the social applications of the author's doctrine. His political as well as his ethical speculations have much interest of detail independently of their philosophic basis.

Beiträge zur Geschichte der neuern Philosophie vornehmlich der deutschen. Gesammelte Abhandlungen von RUDOLF EUCKEN, Professor in Jena. Heidelberg: G. Weiss, 1886. Pp. iii., 184.

The three German thinkers who have been selected as the subject of the first of these essays are Nicholas of Cusa, Paracelsus and Kepler. The aim is carefully limited at the opening, all Kepler's purely astronomical ideas being excluded, and only one doctrine of Paracelsus being specially studied, *viz.*, that of "development" (a view of the whole world as an organism having stages of life analogous to those of an individual); but this method enables the author to give a pretty complete picture of the leading conceptions that found expression in Germany at the dawn of modern thought. The points which he brings out are that these early German speculations, like the philosophy of the Renaissance generally, derive their impulse from a break with Scholasticism; that they are built up out of elements to be found in ancient philosophy, especially in the writings of the Neo-Platonists; and that they are yet essentially original in the direction given to them by the effort to find expression for a new and distinctively modern view of the world. In the second essay ("On Images and Comparisons in Kant") an attempt is made to show that Kant's illustrations (if we take the most important and those that are oftenest repeated) have a character of their own from which the chief characters of his philosophical system might be inferred. The next essay gives a balanced estimate of the merits of Trendelenburg both as a systematic philosopher and as a historian of philosophy. The last of the series is a contribution to the history of Party-names in philosophy. One result of this research is that the nomenclature of philosophic parties that is at present in use comes chiefly from three sources,—(1) antiquity, (2) the beginning of the modern period, (3) the most recent times. It is interesting to learn that "among modern peoples none has been so productive in this field as the English," and that it continues to be so up to the present. From the examples given, the generalisation may be made (although the author does not make it himself) that names with a theological bearing have originated in England, names with a political bearing in France, and names that are strictly philosophical in Germany. Transitions of meaning in the passage from one age and country to another are, of course, an important part of the study. The transitions seem to be such as might be looked for if we generalise as suggested.

Institutiones Juris naturalis seu Philosophiæ moralis universæ secundum Principia S. Thomæ Aquinatis ad usum scholarem adornavit THEODORUS MEYER, S.J. Pars I. Jus Naturæ generale continens Ethicam generalem et Jus sociale in Genere. Cum Approbatione Rev. Archiep. Friburgensis. Friburgi Brisgoviæ: Herder, 1885. Pp. viii., 498.

This is the second of the series of works dealing with philosophy from the Scholastic point of view begun by Father Pesch's *Institutiones Philosophiæ naturalis* (See MIND, Vols. vii. 424 and viii. 144), and forms the first part of a treatise on moral philosophy. In this part all the general questions of ethics and philosophy of law are discussed and decided according to principles derived from Thomas Aquinas. It has been found necessary (the author says) to refer frequently to later writers on the same subjects, and especially to the more recent, not indeed for the sake of completing the doctrine of S. Thomas—for, as far as moral science is concerned, hardly anything is to be found really established in modern authors that has not already been in some manner either explicitly or implicitly asserted, and for the most part still more clearly and fully treated by the Angelic Doctor; but "partly that new errors which are to be vanquished by ancient truth may be known from their own new springs, partly that the historical evolution of science and its present condition may appear". The references both to modern and to ancient authors are extremely copious.

RECEIVED also :—

W. R. Gowers, *Lectures on the Diagnosis of Diseases of the Brain*, London, J. & A. Churchill, pp. vi., 246.

J. K. Bluntschli, *The Theory of the State* (Authorised Translation), Oxford, Clarendon Press, pp. xx., 518.

E. B. Bax, *A Hand-book of the History of Philosophy*, London, G. Bell, pp. 419.

Hegel & Michelet, *Philosophy of Art* (Translation), Edinburgh, Oliver & Boyd, pp. xv., 118.

P. K. Ray, *A Text-book of Deductive Logic*, 2nd Ed., London, Macmillan, pp. xvi., 311.

J. Longland, *Who and what is God?*, 2nd Ed., London, Hamilton, Adams, pp. 79.

E. Droz, *Étude sur le Scepticisme de Pascal considérée dans le Livre des Pensées*, Paris, F. Alcan, pp. 394.

C. Lafontaine, *L'Art de Magnétiser*, 5me Éd., Paris, F. Alcan, pp. xii., 314.

G. Cesca, *Il Monismo meccanistico e la Coscienza*, Treviso, L. Zoppelli, pp. 29.

B. Labanca, *Il Cristianesimo primitivo*, Torino, E. Loescher, pp. xxiv., 448.

Abelardius, *La Religione come Scienza*, Cremona, Tipog. sociale, pp. 111.

A. Bastian, *Die Seele indischer u. hellenischer Philosophie in den Gespenstern moderner Geisterseherei*, Berlin, Weidmann, pp. xlviii., 223.

R. Eucken, *Die Philosophie des Thomas von Aquino u. die Kultur der Neuzeit*, Halle a. S., C. E. M. Pfeffer (R. Stricker), pp. 54.

A. Steudel, *Ueber Materie u. Geist*, Stuttgart, A. Bonz, pp. 58.

A. Freiherr von Berger, *Raumanschauung u. Formale Logik*, Wien, C. Konegen, pp. 48.

J. Bergmann, *Vorlesungen über Metaphysik mit besonderer Beziehung auf Kant*, Berlin, Mittler, pp. viii., 490.

J. Kreibig, *Epikur*, Wien, Halm u. Goldmann, pp. 50.

P. S. de Laplace, *Philosophischer Versuch über die Wahrscheinlichkeiten* (Uebersetz.), Leipzig, Duncker u. Humblot, pp. x., 198.

NOTICE of most of these will follow.

IX.—NOTES AND CORRESPONDENCE.

A SUPPOSED LAW OF MEMORY.

Mr. J. Jacobs, in his careful and benevolent account of my little book, *Ueber das Gedächtnis* (MIND, Vol. x. 454), tries to deduce from some of my results a very simple numerical relation. I had investigated the dependence existing between different quantities of nonsense-syllables and the number of repetitions required to learn them by heart. Though the resulting numbers proved remarkably uniform in two sets of experiments, I was not able to unite them by a simple mathematical formula. Mr. Jacobs thinks he has found out the following one: The number of repetitions required to learn a given set of syllables by heart is (in my case) treble the excess of syllables over the threshold (*i.e.*, over the number of syllables learnt without repetition). The latter number being, for instance, 6, a row of 12 syllables would be reproduced after $3\,(12-6)=18$ repetitions, a row of 20 syllables after $3\,(20-6)=42$ repetitions. Perhaps this relation, though seemingly confirmed to some extent by my experimental results, will appear rather too simple to be very credible. The conditions of my experiments were simple enough in comparison with the intricacy of reproduction in ordinary life, but they were still very complicated in comparison with elementary psychological relations; my numerical results therefore can hardly be expected to be expressible by *very* simple formulas. On this account I refrained when I first read Mr. Jacobs's hypothesis from commenting upon it. But since Mr. Jacobs, following up his idea, makes it the starting-point of some further remarks in a paper read before the British Association and published in MIND 41, I must say a word about it, in order to avert further confusion. The supposed law is based upon a very unfortunate and very regrettable misprint in my book. The Table upon which Mr. Jacobs founds his suggestion, and which he correctly reprints from page 64 of my book, contains the number 26 instead of 36. By introducing the latter into the above formula, the calculated result becomes too different from the observed one to leave any possibility for the supposed relation. In the first place, of course, I myself am responsible for thus leading my critic astray, and I sincerely regret what waste of time and thought has been caused by the incorrect figure (by the way, the only one I have hitherto detected in the numerous Tables of my book). But it will only be fair to acknowledge that the fault rests not with me alone, and that the error of Mr. Jacobs was not necessarily determined by the slight neglect I committed. On page 63, immediately preceding the one in question, the right number 36 is mentioned twice, and on page 65, immediately following the mischievous Table, there is first a diagram and secondly a paraphrase of the results obtained, which both contain again, explicitly and implicitly, the correct number 36.

Berlin. H. EBBINGHAUS.

'FALSEHOOD' AND 'IGNORANCE' IN PLATO.

I am surprised that neither Dr. Martineau nor Prof. Sidgwick (in MIND 41) has appealed to the well-known passage *Republic* 382, which is obviously referred to in *Rep.* 535, one of the places under discussion. I do not see how the former passage can leave any doubt at all as to what the conviction is which these two places are intended to express, *viz.*, that ignorance, *ἡ ἐν*

τῇ ψυχῇ ἄγνοια ἡ τοῦ ἐψευσμένου, is the essential and primary falsehood, *τό γε ὡς ἀληθῶς ψεῦδος*, of which spoken falsehood, *τό ἐν τοῖς λόγοις* (whether poetical fiction or intentional lying), is a mere secondary image. The lie in the soul is thus unquestionably treated as a greater evil than the intentional spoken lie. The former is regarded as the essence, the latter as the accident, and the latter as capable of existing without the former, for it is *οὐ πάνυ ἄκρατον ψεῦδος*.

Further, the lie in the soul is always involuntary : *τῷ κυριωτάτῳ ἑαυτῶν ψεύδεσθαι—οὐδεὶς ἑκὼν ἔθελει*. The antithesis is not completed in *Rep.* 382 by pronouncing *τό ἐν τοῖς λόγοις ψεῦδος* to be voluntary, although this is strongly implied in respect at least of the exceptional cases in which it may be *μὴ ἄξιον μίσους*. But no one who compares the two passages can doubt that it is the *ἑκουσίον ψεῦδος* of 535. And its voluntary character is certainly not restricted to the cases in which it is allowable ; for in them it is not hateful, while it is characterised as *ἑκουσίον ψεῦδος* in the very sentence which emphatically pronounces it abominable. It is therefore unquestionably regarded in these two passages as voluntary pravity, and yet as secondary to and less terrible than ignorance, the state in which the mind itself is helplessly given over to the falsehood. Plato is appealing, in the first instance, to the plain fact that the very man who does not mind telling a lie will acutely resent having a lie told to him, *i.e.*, regards being deceived as an evil. Plato's expressions, however, in these two passages do certainly to my mind seem perverse, in so far as for the moment he neglects the bad will of the intentional lie and treats it as essentially a spoken mistake. But it is plain that the fundamental idea which Plato is illustrating is much more profound than this : it is that the cause is worse or more real as an evil than the effect ; that the degradation and perversion of the whole mind, for which ignorance in his wider use of language is a term, is a more terrible thing than its emanation in a bad act, which, as accepted by that perverted mind, is *in one sense* voluntary.

I do not think that Plato's general tendency to deny the existence of voluntary pravity substantially traverses the above result. Such a denial may aim at suppressing a fact or at modifying an explanation. Plato's doctrine in the *Republic* aims only at the latter ; whereas I should imagine that the views of the historical Socrates had rather the former bias. In the *Republic*, the existence of voluntary wickedness, wickedness arising from no intellectual miscalculation, but from the appetite and lust of the individual, is enforced with all the powers of language. In the description of the slave of lust (the 'tyrannical' man), it is impossible not to recognise pravity which in any ordinary sense of language must be considered voluntary. And though Plato loves to recur to the idea of mere intellectual deception, as in the argument that the pleasures of sin are not genuine, it is obvious that all through this part of the *Republic* he tends to transform the idea of 'involuntary' into the idea of 'voluntary, but not in the true sense,' *i.e.*, not emanating from a complete and harmonious self. Thus the doctrine that vice is ignorance and so involuntary tends to pass into the doctrine that vice emanates from an irrational element, and so from a spurious will. 'Involuntary' passes into 'not free' and merely denies any explanation of vice which involves its issuing from the true or rational self. With a doctrine undergoing this amplification, it is not surprising that Plato should yield to common usage so far as to call a form of vice *ἑκουσίον*, *i.e.*, willed but not freely willed. The key to all this part of the *Republic* is surely in the words (*Rep.* 577), *καὶ ἡ τυραννουμένη ἄρα ψυχὴ ἥκιστα ποιήσει ἃ ἂν βουληθῇ, ὡς περὶ ὅλης εἰπεῖν ψυχῆς*, the mind which is the slave of lust (*τυραννουμένη*) is, as he has just said, *δούλη*, not *ἐλευθέρα*. The qualification *ὡς περὶ ὅλης κ. τ. λ.*, shows in the plainest way that Plato

is not just now prepared to deny that the wicked mind *in a certain sense* does what it pleases.

I am therefore, on the other hand, most heartily with Prof. Sidgwick in thinking that the choice of lives in the myth of Er gives no true indication of Plato's ideas of moral freedom, and in general I subscribe to his view that the myths should not be drawn into evidence on philosophical questions. It is also true, as he says, that even according to the myth the choice does not escape from necessity, being predetermined by previous conduct. The contrast between the account of this choice in the myth, and the passage concerning freedom and slavery, *Republic* 577, has always seemed to me a leading instance of the gulf between the semi-sensuous imagination and the philosophic intelligence. In Plato's true ethics the opposite to freedom is δούλεια not ἀνάγκη.

BERNARD BOSANQUET.

THE ARISTOTELIAN SOCIETY FOR THE SYSTEMATIC STUDY OF PHILOSOPHY.—At the meeting of December 14, the President brought before the Society Professor Siebeck's *De doctrina Idearum qualis est in Platonis Philebo*, bringing it into connexion with the questions which arose, at the previous meeting, out of Mr. Ritchie's paper on the *Phædo*. At the first meeting in the new year, Jan. 11, the examination of Kant's *Critick of Practical Reason* was resumed by Mr. H. W. Carr (V.P.), in a paper on the "Analytic," cc. 1, 2. On Jan. 25, a paper by Mr. S. Alexander on *Hegel's Conception of Nature* was read, and gave rise to a lively and prolonged discussion, in which Prof. Bain and Mr. G. J. Romanes took part. Feb. 8, Mr. E. P. Scrymgour (V.P.) read a paper on *Cause and Personality*, which also gave rise to an animated discussion. Feb. 22, the President brought before the notice of the meeting some of the more important passages in Book i. of T. H. Green's *Prolegomena to Ethics*, together with some *marginalia* of his own. The passages were first read, with the comments, and were then discussed severally, and compared with each other, and with the theory of which they formed part.

An "American Society for Psychical Research" has been founded at Boston, on the same general lines as the English one, and has issued the first Number of its *Proceedings* (July, 1885). Prof. S. Newcomb of Washington is President, and Prof. G. Stanley Hall a Vice-president.

The sittings of the Paris Society of Physiological Psychology (whose transactions now fill so large a part of the *Revue Philosophique*) are henceforth open to the public. They are held on the last Monday of each month, at 8·30 P.M., in the rooms of the Society, 3 Rue de l'Abbaye.

Ph. Mainländer's *Philosophie der Erlösung*, originally published in 1876 (2nd ed. 1879), has just been completed by the issue of the last (5th) part of a second volume of *Zwölf philosophische Essays* that has gone on appearing in parts since 1882 (Frankfurt a. M. : C. Koenitzer). A short *Lebensskizze* of the author, from the hand of his sister, will follow after some months. Mainländer, the most thoroughgoing of all pessimists, died young, before his first volume saw the light. Some account of his work will be given later on. Prof. Wundt gave a general indication of the character of his doctrine in MIND as far back as 1877 (Vol. ii. 510).

The Italian philosophical journal, *Filosofia delle Scuole Italiane*, founded sixteen years ago by the deceased Count Mamiani, is now, under his successor in the editorship, Prof. L. Ferri, transformed into *Rivista Italiana*

di Filosofia, and appears in a highly improved material guise. Being no longer the only philosophical journal in Italy, it will, without abandoning its traditional character, aim more expressly "at moving with independence upon the ground of free inquiry and of criticism of knowledge". At the same time, the *Rivista di Filosofia Scientifica*, now in its fifth year, is changed from a bi-monthly of 128 pp. into a monthly of 64 pp.; the director, Prof. E. Morselli, having now Sig. E. Tanzi associated with him as acting editor.

Different French publishers are contending with each other in the issue of students' texts of the philosophical works now prescribed, by decree of January 1885, for use in *lycées*. Among those which have thus far appeared, special mention may be made of M. F. Picavet's edition of Part i. of Condillac's *Traité des Sensations* (Ch. Delagrave). M. Picavet has given, to the length of pp. cxxxii., an account and appreciation of Condillac's life and works which is very noteworthy, and also promises the results of a more extended research on the history of French Sensationalism. It is interesting to observe that the prescription of Condillac is due to M. Paul Janet, though why it should stop short at Part. i., which is limited to "the senses which, of themselves, do not judge of external objects," is not explained.

Prof. Ernst Laas of Strassburg, author of *Kant's Analogien der Erfahrung* (MIND, Vol. ii. 133) and other works, has just died, at the age of 48.

Prof. J. G. Schurman of Dalhousie College, Halifax, N.S., has been appointed to a newly founded and well-endowed chair of Ethics and Philosophy in Cornell University, N.Y.

THE JOURNAL OF SPECULATIVE PHILOSOPHY.—Vol. xix., No. 3. G. W. Cooke—*The Dial*. Hegel—Introduction to the Philosophy of Religion (tr.). Leibniz—Critique of Locke (beginning of a translation of the *Nouveaux Essais*). Goeschel—On the Immortality of the Soul (tr.). Notes and Discussions, &c.

REVUE PHILOSOPHIQUE.—An. xi., No. 1. J. Tarde—Problèmes de criminalité (i.). F. Paulhan—Le langage intérieur et la pensée. K. Dieterich—David Strauss et l'idéalisme allemand. Notes et Discussions (Bourru et Burot—Sur les variations de la personnalité. Lechalas et Egger—Sur quelques illusions visuelles). Analyses et Comptes-rendus (D. G. Thompson, *A System of Psychology*, E. E. Saltus, *The Philosophy of Disenchantment*, &c.). Rev. des Period. No. 2. A. Binet—La perception de l'étendue par l'œil: Recherches expérimentales. G. Tarde—Problèmes de criminalité (fin). L. Carrau—La philosophie de Butler: i. La morale. Notes &c. (A. Binet et Ch. Féré—Expériences sur les images associées. G. Hoctès—A propos de graphologie). Analyses, &c. Société de Psychologie physiologique (Pierre Janet—Sur quelques phénomènes de somnambulisme. J. Héricourt—Un cas de somnambulisme à distance. Ch. Richet—Un fait de somnambulisme à distance. H. Beaunis—Un fait de suggestion mentale. L. Marillier—Études de quelques cas d'observation observés sur moi-même. F. Myers—De certaines formes d'hallucinations. Ch. Richet—A propos des images mentales). No. 3. L. Dauriac—L'acoustique psychologique. Ch. Féré—Sensation et mouvement: Contribution à la psychologie du fœtus (avec fig.). L. Carrau—La philosophie de Butler: ii. *L'Analogie*. Analyses, &c. Soc. de Psychol. physiol. (R. Garofalo—Contributions à l'étude du type criminel: recherches expérimentales. Bourru et Burot—Les premières expériences sur l'action des médicaments à distance. Ch. Richet—L'action des substances toxiques à distance; De quelques phénomènes de suggestion sans hypnotisme).

La Critique Philosophique (Nouv. Sér.).—An. i., No. 12. . . . C. Renouvier—La morale criticiste et la critique de M. A. Fouillée (iv.). . . . De la morale exclusivement religieuse, à propos d'un livre de philosophie chrétienne de l'histoire (C. Malan, *Les grands traits de l'histoire religieuse de l'humanité*). Notices bibliog. An. ii., No. 1. . . . C. Renouvier—La morale criticiste, &c. (fin). . . . F. Pillon—L'anatomie et la physiologie d'Aristote (i.). Notices bibliog. No. 2. H. Monin—La notion abstraite de force divine dans *l'Iliade*. C. Renouvier—Examen des *Premiers Principes* de H. Spencer (suite). L. Dauriac—Un livre récent sur le stoïcisme (par F. Ogereau). F. Pillon—L'anatomie, &c. (suite). Correspondance (C. Malan—C. Renouvier).

Rivista Italiana di Filosofia.—Vol. i., Disp. 1. La Direzione—Prefazione. L. Ferri—Sulla vita e le opere di Terenzio Mamiani. R. Benzoni—La filosofia dell' Academia Romana di S. Tommaso. R. Bobba—Sopra un lavoro del prof. Ferri intorno all' idea di sostanza. F. Bonatelli—Trucioli di filosofia. P. d'Ercole—L'educazione del bambino secondo Pestalozzi, Fröbel e Spencer. Bibliografie. Notizie, &c.

Rivista di Filosofia Scientifica.—Vol. iv., No. 5. B. Labanca—Ambiente fisico del Cristianesimo primitivo. G. Bonelli—Individuo e gruppo in biologia. R. Acanfora-Venturelli—Studii di psicofisica: Il processo nervoso in rapporto al concetto della sensibilità. G. Canestrini—Sopra un istinto singolare di un ragno nostrano. Riv. sintetica (U. Rabbeno—L'evoluzione religiosa odierna). Riv. analitica. Riv. bib., &c. No. 6. P. Mario—La vita dei cristalli. E. Dal Pozzo di Mombello—L'universo invisibile: Indimostrabilità fisica d'uno stato futuro. I. Vanni—I giuristi della scuola storica di Germania nella storia della sociologia e della filosofia positiva. Riv. anal. Riv. bib., &c. Vol. v. (Serie 2), No. 1. G. Cesca—La dottrina psicologica sulla natura della coscienza: i. Storia delle teorie psicologiche sulla natura della coscienza. G. Cantoni—Di un probabile riordinamento degli studi superiori in Italia. Riv. sint. (G. Bonelli—Il problema della morale nella filosofia scientifica.) Riv. bib., &c.

Zeitschrift für Philosophie, &c.—Bd. lxxxviii., Heft 1. Koppelmann—Lotze's Stellung zu Kant's Kriticismus. J. Döderlein—Was fehlt dem ontologischen Beweis? E. Nemes—Dr. Cyrill Horváth u. sein philosophisches System. G. Glogau—Steinthal's Ethik. Recensionen. Notiz.

Philosophische Monatshefte.—Bd. xxii., Heft 4, 5. M. Jünger—Ueber das Beweisen u. seine Grenzen. Recensionen u. Anzeigen (J. Sully, *Die Illusionen* (tr.); Th. Merz, *Leibniz* (tr.). Litteraturbericht. Bibliographie, &c.

Zeitschrift für Völkerpsychologie u. Sprachwissenschaft.—Bd. xvi., Heft 3. V. Kaiser—Der Platonismus Michelangelos: iii. M's. Mediceer. W. Schuppe—Subjectlose Sätze. H. Baynes—Who are the Chinese? K. Bruchmann—Eine neue Auflage der Zufallstheorie. Beurteilungen. Heft 4. J. Golziher—Ueber Geberden u. Zeichensprache bei den Arabern. L. Kovár—Ueber die Bedeutung des possessivischen Pronomen für die Ausdrucksweise des substantivischen Attributes. A. Klein—Ueber Bedeutung der Etymologie für die Jurisprudenz. Beurteilungen.

Vierteljahrsschrift für wissenschaftliche Philosophie.—Bd. x., Heft 1. H. Holtzmann—Worte am Grabe von Dr. Ernst Laas. A. Meinong—Zur erkenntnisstheoretischen Würdigung des Gedächtnisses. C. Hauptmann—Zur Klärung des elementaren Multiplicationsproblems. Schmitz-Dumont—Theorie der Begriffebildung (i.). A. Marty—Ueber Sprachreflex, Nativismus u. absichtliche Sprachbildung (ii.). Anzeigen. Selbstanzeigen, &c.